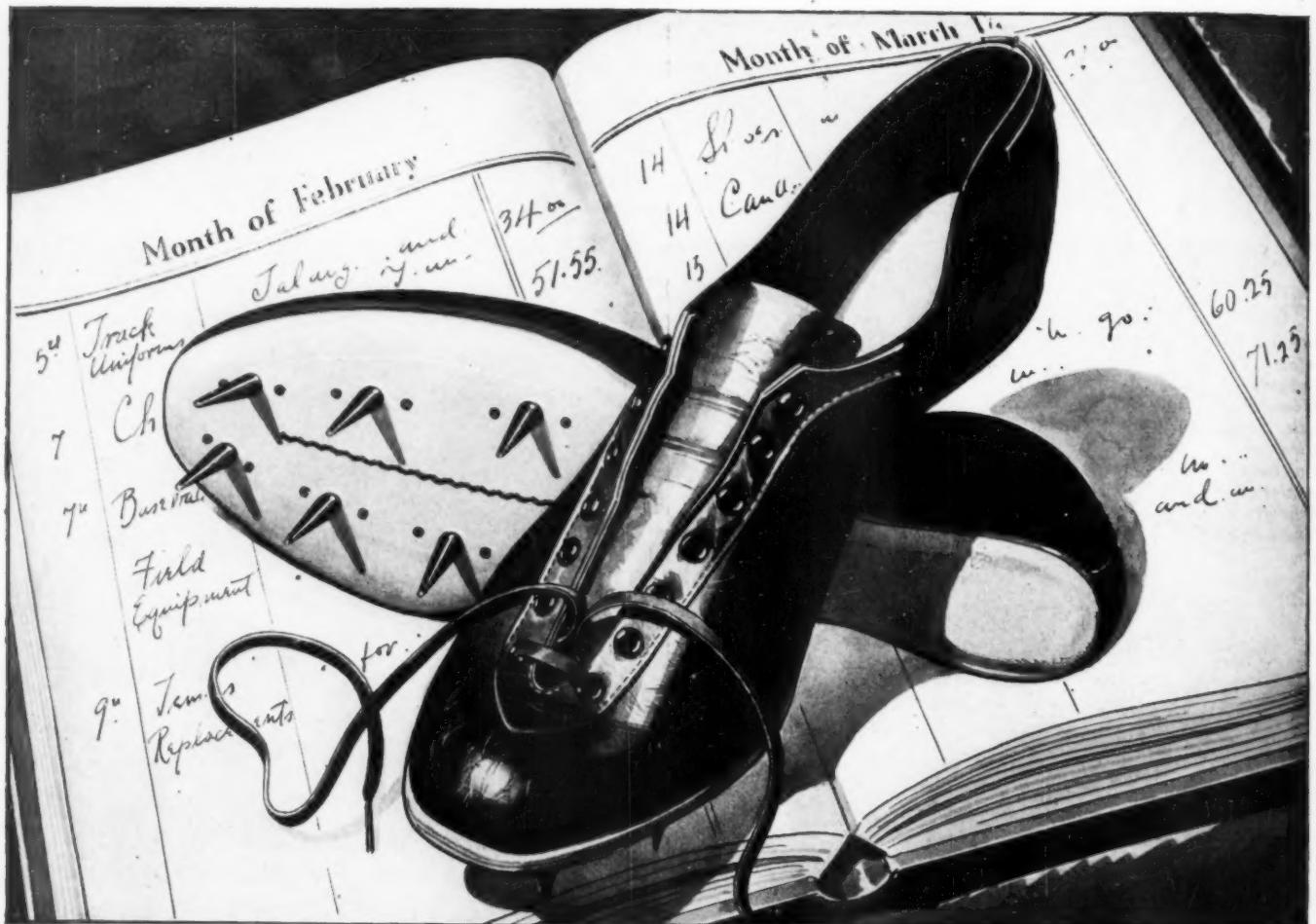


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# SCHOLASTIC COACH

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GEORGE  
WOOD  
WINGATE  
AT SIXTEEN

**M**R. CAULKINS knows his subject, and he should, for his activities and experience both before and especially since his association with the Public Schools Athletic League and the correlated Wingate Memorial Foundation have brought him in touch with play and recreational problems, athletes and coaches, pedagogues and philanthropists, fools, wise men and cranks.

Coaches! Oh ye Gods, what a problem! Paid or volunteer? Professional or layman? Specialist or all around ability? And as troublesome and important—whom shall he coach, all or a few? Must his team win at any cost or shall he back up the Olympic policy that "the important thing in games is

not winning but taking part—the essential thing is not conquering but fighting well?"

Of all of these Caulkins writes with knowledge and intelligence. Let me add but a few thoughts.

## RULES

To do anything well it must be done intuitively. Rules should be learned and after learning never consciously remembered but become as much a part of the habits and customs of the game as walking, running, dodging, speaking, breathing. If rules are changed from schoolboy to college days this cannot as readily be done. Standardization should be the order of the day and the scholastic officials should have at least voice in the framing of rules and certainly voice and vote in their adaptation and enforcement for schoolboy use.

## FUN

Any game worth playing at all is worth playing well and worth playing to win. All games should be played for the joy, the fun that there is in them, and not merely or even so much for the exercise or good health or character building corollaries to be gotten out of them. But while the joy of effort in its very self is fine, and for that matter divine, to calculate that joy merely with the measuring stick of the mo-

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It is fitting that this Wingate Memorial issue of *Scholastic Coach* be prefaced by a few words from the men who are leaders in carrying forward the work of the Foundation. Mr. Kirby, its president, has written the introductory piece in which he presents Mr. Caulkins, secretary of the Foundation. Mr. Kirby's athletic connections, too numerous to mention, include posts of responsibility and action in the high school, college, A.A.U. and Olympic fields. He is perhaps the only man in the country who is close to all the groups that make up American amateur sport. What will interest high school men most is Mr. Kirby's connection with the Public Schools Athletic League of New York City. Mr. Kirby holds the presidency of the League, which plans and conducts the interscholastic athletic programs for all of New York's public schools.

Mr. Caulkins is associated with Mr. Kirby in the P.S.A.L. as well as in the Wingate work. Before the Wingate Foundation, Mr. Caulkins was manager of the National Physical Education Service which was responsible for the establishment of physical education laws in twenty states. Prior to that he was Washington representative of the National Recreation Association.—Editor.

ment is to forget that the drudgery and trials and sacrifices and hurts of the monotony of practice and performance oftentimes brings that perfection which makes the champion, and that while the joy of anticipation may be excelled by that of accomplishment, the joy of retrospect to those who with me have left their days of athletic conquest behind them, is both keen and satisfying. GUSTAVUS TOWN KIRBY

## The Coach's Main Job Is Teaching Athletics

By E. DANA CAULKINS

THE school coach is usually a saint or a chief among sinners. He is a shining hero or he is a total failure. No one will let him stand on the middle ground of success and efficiency. He is judged by all sorts of

standards, depending on who is pronouncing the judgment. The severest traditional criticism is that composite of public opinion which includes the alumni, the town folk, the student body at-large and sometimes the betting fraternity. No matter what may be the quality of the material in his squad, no matter what the strength of the opposing teams, no matter how long the schedule or how few the hours of practice he must produce a winning team.

On the other hand, the aspiring young player and the player's daddy, or his uncle, or next door neighbor, want their boy to make the team and perhaps a certain preferred position on the team; and if this particular boy achieves this desire his sponsors

sing the praises of the coach. The principal and the faculty committee want a winning team also, but their ambition is tempered by the desire to conform to the dictum of their educational confrères and superiors who decry "over-emphasis," "specialization" and the like. Some health authority demands that the coach shall build all-round physical perfection in the player and would add to his essential equipment the stethoscope, the medicine dropper and the scalpel of the tonsilectomist. The English professor has a word to say on the effect of the slangy lingo of the athletic field, on the progress of the pupil toward the correct and artistic use of his mother tongue. The teacher of ethics sees in the athletic field and the gymnasium nothing but a laboratory for the development of the finest qualities of character and the effective submergence of all anti-social tendencies.

What a coach he is, if at one and the same time he can bear up under the buffettings of all his critics and would-be guides, and serve perfectly all these masters! They expect too much of him and are pulling him in too many directions. Furthermore, he is not the super-human magician as frequently advertised. To be sure he is leading in activities in which the players or would-be players are intensely interested and out of which they derive intense satisfaction and enjoyment. To that extent therefore, he has a special advantage and opportunity to influence the players during the hours of his association with them. He also has a marvelous power to control the habits of the players in matters of

diet, sleep and other elements contributing to wholesome allround living as well as to athletic success. But this is because of his rating, in their eyes, as a coach and authority of a subject—athletics—that fascinates them.

#### THE INDIVIDUAL PLAYER

What is the job of the coach? First off, I should say that his primary responsibility is to learn as much as he can about what the individual player needs to do in order to perform as skillfully as possible and then study how he can most effectively teach the individual player so that he can become a skillful performer. Of course, in the team games the individual players need to be trained in cooperative effort so that the sum total of their individual skills pro-

duces effective team play. But I make no apologies for putting first the task of producing a skillful individual player and a skillful team. I maintain that all the other objectives such as health, character-building, etc., about which the coach is being hounded from many angles, can be best served in their relation to the central objective of producing skillful players. Of course, the coach will be insistent that the parent or school shall provide a thorough physical examination and that he shall have competent medical advice as to those activities which may prove harmful or dangerous to the individual player. Of course, he will tone down the aggressiveness of the bully and stimulate the aggressiveness of the shy and unassertive candidate. Of course, he will organize squad leaders and invite assistance from other faculty members to the end that the game may be taught not to a few but to as many as possible; and he will attempt to obtain the space and equipment necessary to accommodate the maximum number of players. All these things are not contrary to the teaching of athletic skill which I have set forth as the first objective round which all other objectives should center.

The coach may preach health and morals till he is blue in the face but

if he isn't doing a good coaching job his preaching will fall upon deaf ears. His influence as a leader of youth depends primarily upon his coaching ability.

#### GO BEYOND THE VARSITY

But there is one great mistake which the coach may stumble over in accepting the doctrine that his first duty is to perfect his coaching ability. His playing spaces, equipment and time may be severely limited, so he decides the best he can do is to concentrate his coaching work on a small varsity squad. He will limit himself to being *varsity* coach. He will not aspire to be *coach* of football, basketball, baseball, etc. He will not try to teach the game to *all* the pupils who are physically qualified and keen to learn the game. He knows that Knute Rockne had 800 boys playing football at Notre Dame but look at his playing space and equipment and staff of assistants! Does he know how Barney Hyman coaches track and field at New Utrecht High School in New York City?

Barney has one half of a city block for a field to work on. He has no staff of coaching assistants. But he has a squad of 200. He could cut the squad to twenty and ride along to a city championship because he has good material and Barney is a skillful coach. But he is not coach of the varsity track team at New Utrecht. He is coach of track at New Utrecht. So he keeps the entire squad of 200 and as many more as want to come out. Does he organize? He emphatically does. From the experienced pupils whom he himself has trained he appoints a captain for each event. He appoints a corps of pupil managers, each one responsible for part of the non-coaching detail. Does he provide competition and maintain keen interest for the entire squad of 200? He does. Organized into divisions and with heats of five he runs frequent competitions. The boy who runs fifth in his heat scores one point on his individual record chart which is maintained throughout the season—the boy

who places fourth scores two points and so on. Thus interest and incentive to improvement are maintained at high pitch. Incidentally, New Utrecht has won most of the city championships in recent years. So even from the standpoint of varsity supremacy Coach

(Concluded on page 25)



MR. KIRBY



MR. CAULKINS

# VARIATIONS OF THE PIVOT PLAY

By DAVID TOBEY

As both coach and official, and teacher of prospective coaches at the Savage School for Physical Education, Mr. Tobey is in an excellent position to speak authoritatively on basketball and its newly developed ramifications. Before joining the faculty at the Savage School, Mr. Tobey directed athletics at the Kearny High School in Arlington, N. J., and coached basketball at De Witt Clinton High School, and St. Ann's Academy, New York. As a player he was a member of the undefeated Savage School team of 1917 where among his teammates were Nat Holman and David MacMillan, Minnesota coach. This season Mr. Tobey conducted the basketball lecture series for the Wingate Memorial Foundation.

AFTER the national basketball committee had reversed its interpretation of the three-second, back-to-the-basket pivot rule twice after the rule books were in the hands of all the coaches and officials, it finally came to the decision on November seventh that a pivoter in the free-throw lane must get rid of the ball within three seconds of his coming into possession of it, regardless of what he did with the ball in his possession in the meantime.

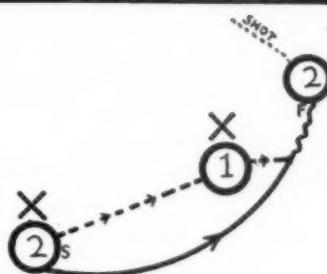
It is assumed, however, that he may take a shot at the basket, recover the ball if the goal is missed, and be allowed another three-second count. But, everybody to his own interpretation, since this is the open season for basketball interpretations. What have you?

Regardless of the technical fine points of timing the three-second count, the pivot play as we have come to know it is not any worse off than it ever was, and its usefulness as a device for a direct attack at the basket is as good as ever. As a means of keeping possession of the ball, as a stall for back-passing by the pivoter when he cannot safely shoot or pass to a teammate cutting for the basket—as this sort of device it is not so useful as it once was to the team on offense—on courts of ordinary or smaller-than-ordinary size. But on long courts plenty of safe back-passing can still be done without throwing the ball back across the center-line. And, also, if I may mention the fact, plenty of freezing can be done by a well-trained short-passing team, and the longer the court the better the opportunity for freezing.

Now, I have prepared this article with the purpose of describing pivot plays in all their variety. I have not diagrammed nearly all the possible variations of the pivot play, because the variations are limitless, and they all evolve (or revolve) around the

plays I have diagrammed. Let us take them in their turn. Needless to say, they all require fast breaking, fine timing, and the more deception used the greater the chances of scoring from them.

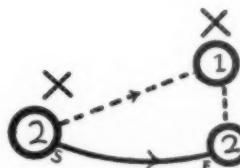
DIAGRAM A



S indicates the start of the player's run; F the finish. Solid line course of the player; broken line, course of the ball; wavy line, a dribble. X indicates the defensive player.

In Diagram A (above) No. 2 passes to No. 1, who is the pivot man. No. 2 cuts around in front of the pivot man, receives a short return pass, and dribbles in and shoots if the block has been effective. There is no longer any question of the legality of this kind of block because the player in possession of the ball (No. 1) has caused it by merely being there. He may use all kinds of feints, and may have to practise in switching.

DIAGRAM B

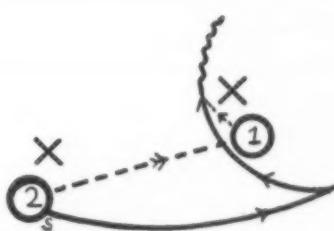


Pivot players have the option of making any kind of play—pass back to a safety man (in the frontcourt, of course) to start another manoeuvre or shot; body-feint defensive men out of position and suddenly twist and take an overhead shot; twist and leap in air for shot; step or dribble away from basket and suddenly face to take a one-handed "lob" shot. It is important when a pivot takes an overhead shot to raise arms forward upward, ball in back, elbows slightly bent before facing basket and release shot with a wrist snap. A step away from basket with the movable foot before

twisting is effective. This move denies any defensive men interception. The latter occurs when so many players bring the ball around in front toward the basket and then try to raise arms for shot. Bluffs, feints, reverses, etc., will keep defense guessing.

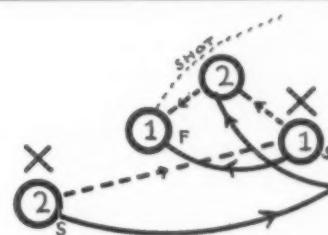
In Diagram B, the same situation prevails as in Diagram A, but this time No. 2 stops short as he passes in front of the pivot man (No. 1), and receives a short pass. No. 2 should take a pot-shot if he can. If not, he can dribble away, or pass away, and adjust himself with his teammates for a new manoeuvre.

DIAGRAM C



In the above diagram (C) another variation of the same situation is shown, with No. 2, after he has crossed the pivot man, reversing and taking the pass on the inside.

DIAGRAM C-a



In Diagram C-a, the situation that prevailed in Diagram C is carried on to become a double pivot play. After No. 2 receives the ball from the pivot man (No. 1), the defense probably switched effectively so that No. 2 himself had to pivot and show his back to the basket. Whereupon No. 1, the original pivot man, sensing the complication, cuts around in front of No. 2 and receives a pass. If you like triple pivot plays, or quadruple ones, go to it.

IMPORTANT NOTE: It must not be assumed that all these pivot plays need be started in the free-throw lane. Most of them can be started anywhere. However, three seconds is time enough for the operation of any one of them, and there would be no great advan-

age in making a point of starting them outside the lane.

DIAGRAM D

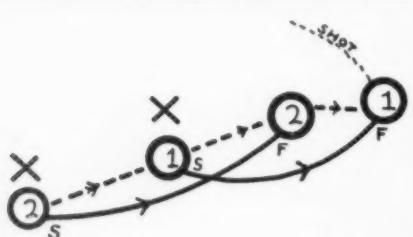
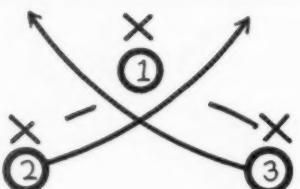


Diagram D shows another double pivot—two successive pivots, with No. 2 starting the play with a pass to pivot man, No. 1. No. 2 cuts around in front, receives a return pass on the far side, and passes to No. 1 again on the far side. If No. 1 is not open for a shot by this time he probably never will be, and something else ought to be tried.

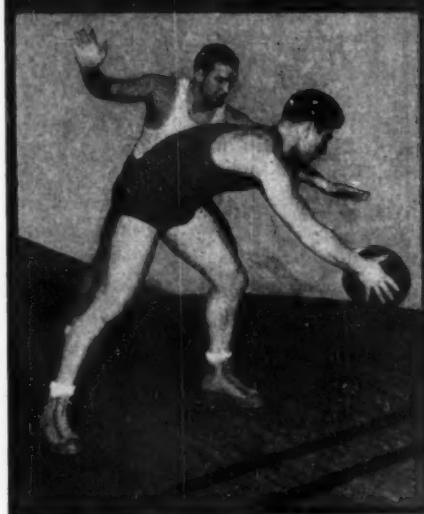
DIAGRAM E



Here in Diagram E two cutters cross and the pivot man, No. 1, has his choice. He will of course give the ball to the cutter who is in the better position to score. If neither succeeds in uncovering, the pivot man should dribble out of the free-throw lane before he is counted out.

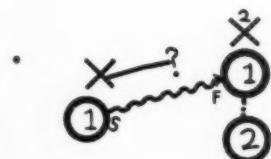
The photographs in the next column illustrate correct position play of the defensive player guarding a pivot man who has not the ball as in the top picture; and who has received the ball as in the lower picture.

In guarding a pivot man who has not yet received the ball the guard should stand close to the weak side, ready to break up the pass before it gets to the pivoter, who is a right-handed shooter. If pass is given to unchecked side of pivoter, the latter is forced to return-pass or take a back shot with the chances of scoring against him. If pivoter decides to turn quickly and take a right-hand shot, the defensive man is in a perfect position to block it. (If pivoter is left-handed, defense is on other side.) This only holds true if pivoter is directly in the center of the lane. Otherwise the defensive man must take his place on the inside, between opponent and basket. Whether or not the defensive man dares to risk coming around in front to break up the play is determined by the speed of the on-coming pass, because he must also guard



See Diagram G (below) where No. 1

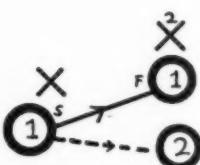
DIAGRAM G



dribbles to the right, stops with the ball, screens off defensive player X-2, and back-passes to No. 2. This is legal, evidently everywhere.

But in Diagram H (below) you see the variation of the play that is definitely illegal according to the Eastern interpretation, but which is legal according to the book. No. 1, in this instance, no longer has the ball when he moves to screen off defensive player X-2. No. 1 first passes to No. 2, then goes and screens off X-2. It is all done

DIAGRAM H



deftly and quickly, and the foul is always on the offensive "screening" player, according to the Eastern group. But according to the book the foul may be on the defensive player as well.

What the Eastern group wants to eliminate is the pick-off plays, where the play is set, involving screening by a player who probably will not even touch the ball on the play.

DIAGRAM J

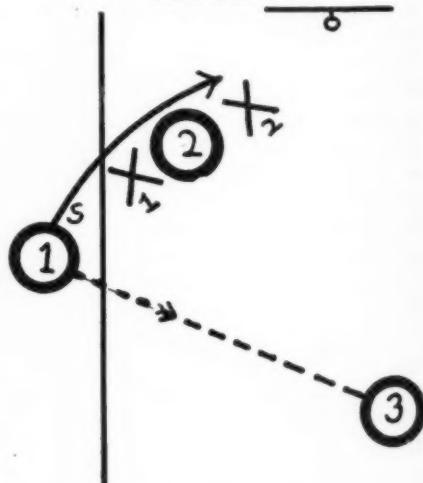


Diagram J (above) is an out-of-bounds play in the frontcourt, from the side, in which No. 1 passes to No. 3 and cuts for the basket. When the player guarding No. 1 (X-1) goes to

(Concluded on page 18)

# TRAINING FOR THE HURDLES

By MONTY WELLS and HARRY HILLMAN

*This article is the result of a happy, and accidental, collaboration between a great hurdler and a great hurdling coach. The main body of the article is a restoration of Mr. Wells's Wingate Lecture. Wells, who established many indoor records, and won the intercollegiate high-hurdle championship, is one of a long line of hurdle record-breakers developed by Harry Hillman at Dartmouth College during the past 23 years. Mr. Hillman, incidentally, is the American Olympic hurdling coach; has been since 1924. The photographs herewith were taken under Mr. Hillman's direction. The description accompanying each is in his own words.*

**A**FELLOW who is going to hurdle well must commit himself at the outset to a program of patient practice. He has to have the grit to get in there and work all the time. He has to learn how to sprint, and he has to learn how to high jump at the same time. Consequently, he has to work a little harder and longer than either a sprinter or a jumper.

On top of all of this he probably gets skinned knees and ankles, and may fall down and get cinders in his knees. He has got to stick with it all the time. It is an event in which one can always improve.

You won't find very many good hurdlers. There are two main reasons for this shortage: the first is lack of instruction. There are all kinds of people who know how to sprint, high jump and so forth, but there have been so few hurdlers in the past that as a result there are few people who know how to go about teaching it. Harry Hillman, I am glad to say, is one of these men who certainly knows his hurdles. He has turned out four men who from time to time have held the world's record in hurdles as well as in high jumping and pole vaulting.

The second reason is that in most of the meets hurdles are not on the program. Lack of competition is very hard on a learning athlete. When I ran in high school we had one meet a year in which there were hurdles. I never ran high hurdles until I got to college, I can therefore truthfully say I owe anything I have done to Harry Hillman.

There are very few good hurdlers, hence it is very easy to pick up points in a meet in this event. The trouble in a lot of high schools is that they have hurdles on the program, but who is going to run them? They pick somebody who is fast, and maybe he will get there. Maybe he is a sprinter, a quarter of a mile runner, or a high jumper. Now, if you have a mediocre sprinter, don't let him sprint, but have him "major" in hurdling.

In high school I did the high jump and broad jump and a few other things, but I was a better hurdler because I spent most of my time on the hurdles. Specialization is the thing today.

The main idea is, if you are going to have a hurdler, have him be a hurdler first and foremost. It is all right to have him broad jump a little and to have him sprint—he has to sprint if he expects to get anywhere—but make the hurdles his goal.

Physically, there are two or three types of hurdlers. There is the short fellow who is very fast. If there is anything that bothers a competitor, it is to see somebody in front of him. In the sprint you can watch him and run for him, but in the hurdles when you start to watch him the next thing you know you are picking cinders out of your leg. You have got to keep your eye on your own race all the way down the line.

You will find the tall, rangy fellows are the fellows who will be the best hurdlers. As a matter of fact, when I get out there on the field I feel like a little kid, because I am only five eleven myself.

I will explain why, although shorter in stature, I can get there with the rest of them. My legs are four inches longer than the average. As a matter of fact, the most of me is legs, and as a result I can get away with hurdling, because one must have long legs to get over the hurdles well. If you have short legs and a long body, it is not so good, because you have to jump. In my case, my legs are as long as a person's who is six foot two or three. I may not look as tall as they, but as for hurdling, I have all I need. I think I am a little better off because I haven't as much above my waist to bend down as a longer waisted hurdler.

Not only must one be tall, but one can't be slow. Maybe a fellow will say, "Well, I guess I will try the hurdles." He goes galloping along and has an awful time getting over them all the way through the race. When I first started out, the coach said, "You have been hurdling a long while over low hurdles; but you haven't any speed. I am going to make you run." I ran and ran and ran until my tongue hung out. I never did so much sprinting in all my life. As a result he finally got me down to where I could run. If your hurdler hasn't the speed right now, train him to sprint. Run him with your sprinters all the time.

There are a lot of faults that come up in hurdling. The first one is hesita-



**EXERCISE No. 1—**Sit on the ground or floor and take the position of a hurdler clearing the hurdle. In this instant the hurdler is in the position of clearing the hurdle with his right leg foremost. Notice the body is bent forward at the waist, the chest facing the front and not turned at an angle. This exercise exaggerates the action of the left arm. The hurdler is stretching forward touching his right toe with the fingers of his left hand, the right arm is held a little to the rear and bent in a runner's position. This position is the ideal form for clearing the high hurdle, with the exception that the left arm should be more to the left, but in this case the left arm is used as part of the exercise. By repeatedly bending forward with the body and left arm extended the hurdler exercises those muscles that assist a hurdler in developing the under muscles of the forward leg and the stomach muscles. It also assists in acquiring the rear leg position, and also in obtaining hip flexibility. This exercise is reversed if the hurdler clears the hurdle with the left foot foremost.

tion. You see so many fellows come up to a hurdle, and when they get about two yards from it, they will hesitate. The best idea is to forget the hurdle is there and go for it recklessly.

Another is the fellow who, after he hesitates, decides to go over, and has to make a big sail to clear the hurdle. He looks nice, for a bird, but not so good for a hurdler. He has got to omit hesitating and sailing and go right at it. Sometimes, however, you will find he has a bad take-off. Now there is a lot of talk about how far "so-and-so" takes off. You will find a good hurdler will take off six or seven feet this side of the hurdle and land two or three feet on the other side. You will find that his foot is hitting pretty close to the other side of the hurdle. There is the biggest secret of hurdling—getting down. Don't be up in the air, because you never can run while you are floating through the clouds. You have got to be on the ground to make any time. So don't sail; get down, get down.

There are two views of sailing.

From the side view a sail is when you are high up in the air over the hurdle. From the front view if you see a boy with his arms spread-eagled out, that means trouble. So have him keep his arms in. They used to say that one had to have his arms out so as to keep balanced while clearing the obstacle. You don't have to do that. If you are going fast, you are over before you have time to lose your balance. If you do lose your balance, you lose it going ahead, and isn't that the way you want to go? If you lose your balance going ahead, you have got to run to keep up with yourself.

De Hart Hubbard once said that for the first thirty-five or forty yards of his race all he can do is to keep from falling on his face. He ran on his own momentum. Consequently, he had a lot of kick at the finish. When he runs straight up, he is worn out at about eighty yards, and he has no kick.

If a fellow is sailing, he does three things: his body is up; his front leg is up; his arms are up. So eliminate all three. He has got to be down. Keep his arms in; keep his head down. You know with a diver his body goes where his head goes. You can't do a back dive with your head on your chest. Probably a man who has dived for years can do it, but you know that

**EXERCISES No. 3 and 4**—are very similar. The athlete to the right is Gene Record, formerly of Harvard, and one of the best hurdlers during the past several years, and the hurdler in the Dartmouth uniform below in No. 4 is C. J. Chapman who has very good form. Record is going through the exercise for the rear leg and forward body bending action. Note that he is bending away forward, in fact exaggerating the front body bend. This exercise is one of the most beneficial for hurdlers. It stretches the thigh muscles and assists the hip flexion. Record is not using his arms in this exercise, but is content to work just on his body bend and rear leg action. Chapman is practically doing the same exercise in a different way, with the exception he is endeavoring to have his arms in the proper position in clearing the hurdle and is walking over the hurdle. Notice the good rear leg action, and his left elbow clearing his left thigh. This photograph shows the position a hurdler should be in while coming down from the hurdle. His left arm is being drawn backward while his right arm is coming out front, to be in position with his left leg when landing. In other words he is in the position of a runner as far as his arms are concerned, with the exception he must have a left arm high and side action in order not to hit against his left leg.

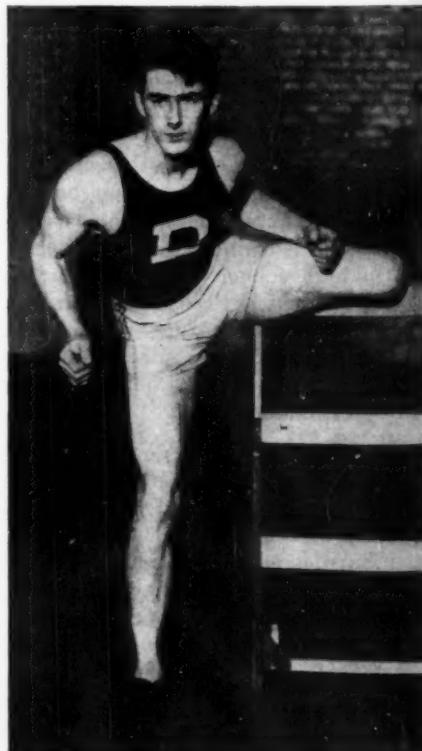


one, two, three, and you are up on the fourth.

A lot of fellows try to alternate. If you have a small fellow, he has to alternate, but as I said before, don't let the small fellow hurdle. If he tends to be a good hurdler, why wouldn't he tend to be a better broad jumper? He could be trained to be a much better broad jumper than hurdler because of his lack of height.

In going for the first hurdle, run for it. Don't just pitty-patter up to it. Go right after it all the way. You get your whole speed in that first fifteen-yard dash, and if you don't get your speed at the first hurdle, you

#### EXERCISE No. 4



**EXERCISE No. 2**—This exercise is similar to Exercise No. 1, with the exception that the hands are held together and the body is turned in a swaying and bending motion, first to the left as far around as it is possible to go, and then to the right—done in the position of a hurdler clearing the bar. Notice that the position of the rear leg is at right angles to the front leg from the hip to the knee, and then extended straight to the rear. It also assists in keeping the left foot flat, so that in clearing the hurdle the hurdler does not hook his toe by dropping or dragging it. The toe of the front foot should be pointed upward. Do not get the rear knee too far forward and do not permit it to be behind the body in a dragging position. The hurdler should endeavor to exaggerate the body action by bringing the chest down as near the knee as possible. Notice that the front leg is not straight and stiff, but a bit bent and flexible. Many hurdlers make the mistake of hurdling with a straight front leg, especially in taking off. The present form of approach is by a distinct bent action of the front leg, very similar to the action of a runner in sprinting.

Getting down to a little more detail. First, there is the start. You will find a lot of differences about how you should start, but use a regular sprinter's start. Advise the young fellow to get as near the line as he can. A young fellow may have trouble getting that first hurdle. It is eight steps, and go over on the ninth. Start with the opposite foot. For instance, if a fellow takes off from his left foot he should start with the right foot back. The foot that goes over first should be the hind foot at the start.

The high hurdles are ten yards apart. Between them take three steps and go over on the fourth. For instance, the leading foot lands on the other side of the hurdle. That first step doesn't count. You land, and it is

are going to have to labor for three or four hurdles before you finally attain a maximum. So come out of your holes fast. By that I mean a sprinter invariably will come out very fast, but a hurdler has to stride a little more. So come out as fast as you can without losing too much distance.

You have seen a lot of people hurdle with a stiff leg. The whole trouble is if you have your knee locked, you have to swing the leg up and then you have to swing it down. If your knee is bent, you can just step down. A hurdler will step up as up to a curbstone, then over and down. The idea is to get down as quickly as you can. Anything rigid swings down a lot harder than anything flexible, so the front leg should be bent when it comes up. When you come up, you have it under control and can snap it down when necessary. Another thing, when you go over, keep it straight ahead. Many boys, instead of coming down

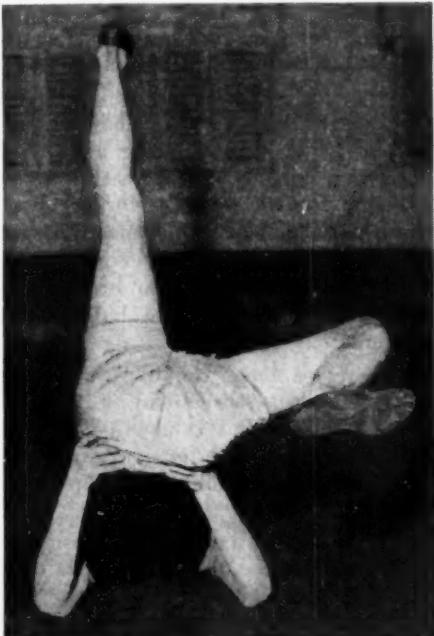
straight, will come down sideways. Falling the opposite way they will be forced to run in a crooked course. If a fellow has a tendency to pull to the left at first, the best way to offset that is to have him try to aim it out to the right. Remember if a fellow has a fault, exaggerate it in the opposite direction.

When you get on top of the hurdle there are many things to think about. The main one is when you are up there you want to get down to the ground quickly. Your left arm goes out with your right leg, and vice versa. At the take-off the opposite arm (left, in this case) is straight ahead. When you get near the top, the back leg is coming up and through. When that leg (left) comes forward, the arm (left) has to go back with the same reaction. The arm comes back fast and pulls the rear leg over automatically. Don't get your arms out from the sides. Keep your elbows bent. Watch the left arm come back. If it came back straight you would naturally run it into your rear leg. So the idea is, when you come back, loop it around the rear knee. At times you will find fellows will be hitting the back knee with their left arm. Be sure they keep that back-going arm clear of the forward-going left leg (knee).

When this leg (left) goes over, a lot of hurdlers drop the knee too quickly. Don't let it drop. That back knee should come right out straight ahead and shouldn't drop until it is directly in front of you. When a fellow drops that knee, he tends to straighten up. At first a fellow will have a tendency to hit that back ankle, and that is because his knee isn't staying up. If your head goes down, your back foot comes up. So you are not going to hit that back ankle if you keep your head down. Keep your back toe up. Don't let the toe point down, because it is going to catch the hurdle if it does.

The front leg, as I said before, goes right straight ahead, and the minute that foot clears the top, down with it. Try to get just as close as you can. Probably at first I would try a fellow on the two-foot six hurdle, and then go up to the three-foot. You will find the young fellow will have much more fun out of it that way. As a matter of fact, when I was in high school I just ran low hurdles. At that time their low hurdle race was the same as a 120-yard high hurdle. Consequently, I learned to hurdle a low hurdle just as if it were a high hurdle, emphasizing body lean, close arm action, and front leg cut-down.

The rear leg should come across parallel to the ground. You will find that a good hurdler will seldom hit



**EXERCISE No. 5**—Lie on the back of the shoulders and partly on the back of the neck, with the hands placed on the hips and elbows on the ground, with the feet extended in the air and the hips off the ground. This is a rather difficult exercise but very beneficial if not overdone. The hurdler can now practice on the front and rear leg action. This posture greatly assists the stomach muscles and hip action and in the exercises one goes through acts similar to some in the other exercises. After acquiring the different leg actions, the hurdler can then go through a flight of imaginary hurdles. The count is stride, stride, stride, hurdle, and repeat ten times. (It is great sport for an onlooker to watch a candidate go through these motions.) It is not advisable to attempt to go through a flight of imaginary hurdles the first time you try this exercise. The difficult thing to do in this exercise is to acquire the form of the rear leg in going over the imaginary hurdle. First you will have to pose and then have someone correct your position. Notice in the photograph the good position of Chapman's rear foot with the toe slightly turned up.



**EXERCISE No. 6**—In going over the hurdle the hurdler should not attempt to jump the obstacle, but to drive right through and down. Many novice candidates and even some more experienced hurdlers invariably will rise in going over the bar. The idea is to dip while crossing the barrier and this dip must be from the waist up and not the head alone. There are many ways of improving this important factor in hurdling. Have the athlete stand alongside two standards for the high jump, and place a light rope several inches below his height, and then have the hurdler go through the space between the rope and the top of the hurdle. A better method I think, is to have two assistants hold a piece of cloth (as in the above photograph) or a wide bandage several inches below the actual height of the hurdler. In the case of a six foot hurdler, the cloth should be held about 5 ft. 9 in. or even lower. By repeatedly endeavoring to go through this space by bending forward at the waist as low as possible, the athlete will eventually only use the minimum space. At first this does not seem possible but it will surprise the hurdler to find that eventually he can go through this space very easily, and he will then know that he is not jumping but driving down, and that his body bend is about right. At the start of this exercise many hurdlers will have the tendency to duck only their heads, but after several practices the hurdler will bend his body and head together.

his ankle. He will usually hit his knee if he hits anything, whereas the poor hurdler will be banging the ankle, due to lack of body lean.

In any running event, body angle is the thing and it is the same in the hurdles. If you cut the front leg down, your foot is hitting underneath and a little behind you. If you don't bend over, you hit with that foot in front and you have to pull yourself along until you get your body ahead again. So get that leg down and back. You will find there is a tendency to fall forward. That is the thing to get. Keep running to catch up with yourself, because that is the way you get speed without waste of effort.

A big thing in hurdling is to keep your eye on the hurdle. Too many men have lost races by looking around

(Continued on page 28)

# COACHING IN A LARGE HIGH SCHOOL

By GEORGE BARCLAY

*The following is a transcript of the Win-gate lecture delivered by Mr. George Barclay, coach of the\* Newtown High School basketball team, New York.*

**T**HE first call for basketball candidates at Newtown brings out anywhere from 135 to 200 boys, which makes the task of the coach for the first few weeks one of organization as much as anything else.

To this multitude of ambitious boys the first thing we say concerns the eligibility rules for New York City high schools. The requirement that interests them most is the rule stating that each player must successfully carry at least three prepared and one unprepared subject if he is to represent his school in interscholastic athletics.

To the chronic flunker we make it plain at the start that it would be much better if he would withdraw from his candidacy for the team at once rather than take up everybody's time in making him ready for the team only to have him be ineligible when the scheduled games begin.

Another point that we make at the start concerns personal cleanliness. We insist that the players soap and wash themselves thoroughly after every workout as a prevention against abscesses, boils and other skin disorders. We also urge them to take care of blisters and scratches at once, for obvious reasons.

At the first practice session we instruct the candidates in the different types of passes—the straight over-arm pass either right or left, the underhand pass, single or double; the bounce pass, and the hook pass. After instructing them in these passes, using the veterans of the previous year's team as demonstrators, I divide the squad into six groups (because there are six baskets around our floor), and put each group in charge of one of the more experienced players. I myself take a position on a platform along the side and watch the procedure from that point.

The squad leaders are instructed to come at once to me if they see any boy handling the ball with superior ability, and I keep my eyes on these boys especially, while not neglecting the less fortunate.

After a week of watching the can-

\*Newtown High School is thirteenth largest in the United States, with an enrollment of more than 6,000. Largest is De Witt Clinton High School, also in New York City, with an enrollment of more than 10,000. Of the 29 largest high schools in the U.S. 21 are in New York City; six in Chicago (including J. Sterling Morton High at Cicero); one in San Francisco; one in Indianapolis.

didates handle the ball, we divide the group at each basket into two lines. The players in one line pass to the players in the other, with the usual combination of fundamental drills, such as pass, receive and shoot; pass, dribble and lay up a running leap shot.

For the second and third week the entire squad is divided into teams according to height and weight. Then we have scrimmages between teams, because the best place to see a player's ability is in scrimmage. The teams stay

**BASKETBALL MATERIAL IS ABUNDANT WHERE THERE ARE 6,000 STUDENTS**

35 fellows in uniform for the remainder of the year. The first squad consists of 15 and the remaining 20 are on the second squad.

Naturally, some may feel that I am unjust in this stand, but on my second squad I have no one that is above a six-terminer for the simple reason we are working to develop in the second squad prospective varsity players, although we may be depriving the seventh and eighth-terminer of an opportunity to play on the second team.

As we know, basketball's main object is to score baskets. There have been various types of offenses that have been generally accepted. The first type, and probably the one used by the majority of schools is the straight five-man offense, every man weaving in and out, trying to get in scoring position and receiving a pass from a teammate to lay the ball up and score the basket.

Another type is the four-and-one offense, four men weaving and interweaving, cutting, cutting, at all times waiting for the opening for the pass, and one man in a defense position ready to cover any player of the opposition who happens to break loose on the recovery of the ball by his teammate.

Then we have the offense of the three and two—three man offense, two man defense. This is usually used by teams playing a defensive game and endeavoring to hold the opposition score down.

We use at Newtown an offense that we call the three, one and one. It calls for one man in the safety defense position in the vicinity of the free-throw circle (see Diagram 1); one man about center; and three men circulating into the corners, waiting for passes and an opening to shoot.

I want to mention here a few set formations of offensive play. The first is the simplest of plays. The center tips the ball either to his right or left. The forward accepts it, makes a pass to his opposite forward underneath the basket. It is a play that is very easily broken up if you have instructed your guards to merely shift into the center of the play and intercept the forward cross play.

The second play in set formation is a forward to center. Tap the ball to the forward; center goes around his men, cuts to the foul line, receives a return pass from the forward that he tapped the ball to and either lays it up or gives it to the other forward

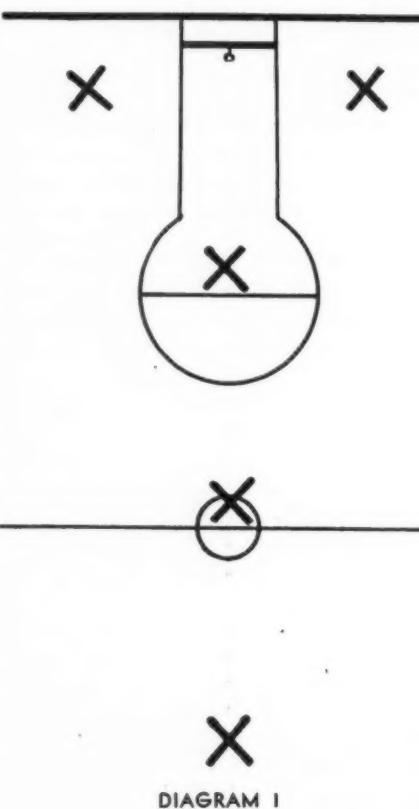
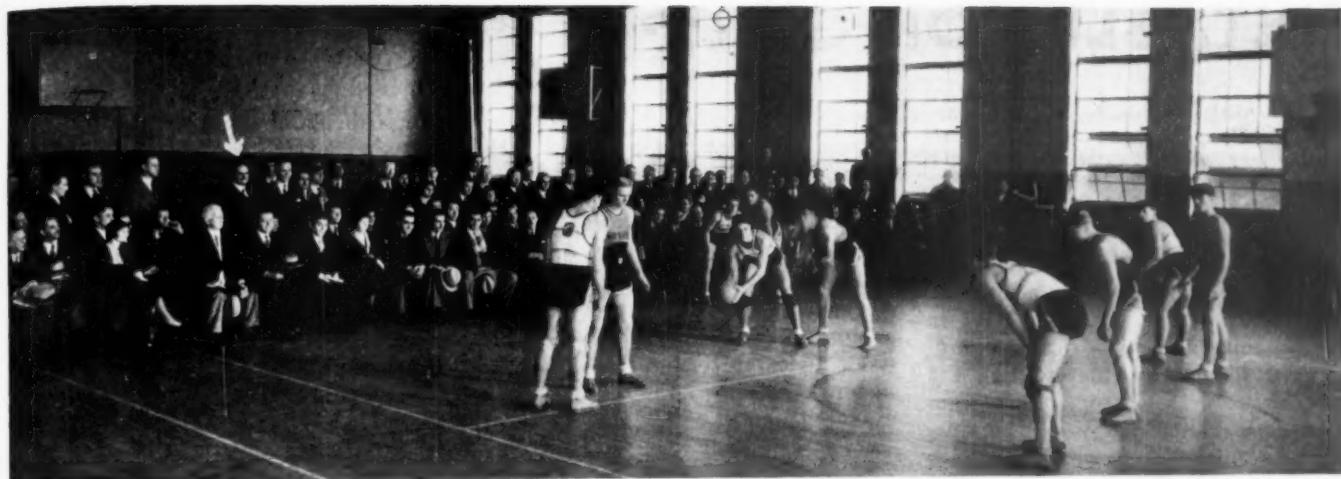


DIAGRAM 1

intact for the next two weeks, but if I notice that a boy in a lower age and weight classification is playing above his class, I advance him to one of the bigger classes where, usually, a better brand of basketball is being played. At any rate, he is advanced to where the better ball is being played, so that he is among equals or near-equals.

At the end of the third week, the squad is cut from 135 or whatever it is, down to approximately 55 or 60. I reorganize the teams and after reorganizing the teams, we play once more for a period of three weeks, and during these scrimmages play is stopped and corrections are made, various discussions are encouraged regarding positions on the floor, etc.

At the end of the sixth week comes the final cut of the season. We keep



WINGATE DEMONSTRATION BY NEWTOWN HIGH SCHOOL TEAM. DR. NAISMITH, INVENTOR OF BASKETBALL, INDICATED BY ARROW.

who is to cut into the opposite zone.

Then you have the play of the forward to center to guard. This play is effective for the reason that as the opposing guard comes in to cover your center, after he comes down in the lane, after tapping the ball to the forward, he leaves an opening for your guard to go around. Your guard swings right around, receives a pass from the center, usually an underhand hook or bounce pass and lays the ball up.

Then the other play in offensive basketball that has been very successful is a straight guard around, where the ball is tapped to the forward and the forward lays the ball over his head to a guard who has circled back of him.

Now as to defensive basketball. Some coaches say that your defense is merely as strong as your offense. But I like to build up a very strong defense. If you have a defensive team and a forward and a center who can score a few points for you, you are very apt to win a lot of ball games. In picking my guards, in the group of over 100 fellows, I usually have some pretty big boys.

We familiarize our boys with four types of defense. The zone defense, three and two, is the one we favor—two men in the backcourt and three men across the front.

The second defense is a straight man to man, or in the terms of the basketball player, dogging the man, chasing the man all around. The rules of basketball state you are not supposed to play the man, but I defy any of you to go into any high school or college game and see the players watching the ball consistently; as you see a forward cut, you will see the guard watch the forward. He is not watching where the ball is coming from; he is watching what position that forward is going to get into.

Then another defense is the four and one defense, otherwise known as

a volleyball defense. You have four men in a zone, two men in the rear, two men in front and one man roaming around in the front court, hoping to intercept the starting formations of an offense by the opponents. At times it works very nicely, at other times the fellow has faded out of position and lo and behold there is a perfect break for the basket and unless you have good defense, they cut down in the center of the court and as they bring your two guards in to cover the center play, a quick pass is given to the corner and then a hook pass is crossed back under the basket and there go two points.

I mentioned before the three, one and one offense. The reason we use this three, one and one offense is because it is also a good set-up for defense.

**HINTS TO FORWARDS:** First, never shoot when off balance. Second, remember that basketball is a team game, therefore, do not get arm weary throwing them up. Third, when you break into a fast offense and two forwards are cutting for the basket, don't be afraid to use the one-two. The one-two, as you probably know, is to receive and give back to the man who gave you the pass. Don't be afraid to return the pass. Fourth, watch closely your opportunities for pivot plays. Fifth, keep on your toes and cut, cut, cut.

**HINTS TO GUARDS:** The first hint, and the thing I try to impress on my guards from the very beginning is that they are fundamentally defensive players and, therefore, the point they prevent is just as important as the one that the forwards or center score. The guard in basketball may be likened to the line man in football. There is not a great deal of publicity for the line man, but there is a great deal of work done by him.

The second point, be careful not to follow feints. If you follow it gives the

opening for the pivot and a beautiful lay up. So instruct your guards not to follow shifts.

Also instruct them, as the third point, to keep their feet well apart and have a well balanced stance, so they may start in either direction and be ready to intercept a play on either side of their particular position.

Another important thing is for a guard never to leave his feet while guarding an opponent. The only place he leaves his feet is under the banking board when he is pulling the ball off.

**COMMENT ON THE NEW RULES:** The coach who has always used a fast-breaking offense will find the new rules of little annoyance, and no change of great importance will be necessary in his style of play, insofar as it is affected by the 10-second center-line rule. However, those coaches who have taught the set-play formations, and who will continue to play their games on floors of ordinary size, will have to put three players into the frontcourt and arrange for set plays from there.

The new interpretation of the face-guarding rule, as it is written in the rules of the Joint Committee, is a welcome one. The interpretation states that it is *not* a foul to face the man. The foul does not occur until the "facing" player shifts to follow his man. Nothing can be gained by merely facing a player. The gain on the part of the "facing" of defensive player comes when he shifts to meet the new movement of the offensive player. It is this shifting or following which this season is a foul.

The new three-second "pivot play" rule will increase the number of plays in the corners of the court. There are many excellent plays that will be stressed with the corners as the place of starting. This will cause a spreading of the defenses, and wider openings down through the middle of the court to the basket.

# SUITABLE FOR GIRLS

Dr. Burdick, who delivered this lecture before the Wingate Foundation, is director of the Playground Athletic League, Baltimore; organizer of the state athletic program for girls in Maryland; and a member of the Editorial Advisory Board of Scholastic Coach.

**S**INCE 1895, when at Newport, Rhode Island, I had a part in organizing a girls' athletic program, I have been interested in the building up of some sort of program of girls' athletics that would be suitable for girls, in accordance with their likes and dislikes, and their particular needs.

There still is considerable confusion and difference of opinion as to what constitutes the suitable in the way of sports, games and athletics for girls. What I have to say here reflects an opinion based on experience and service in the field over a period of years.

As a result of our policy in Maryland during the last fifteen years, I believe we now can trust the girls to play their games without harm to themselves.

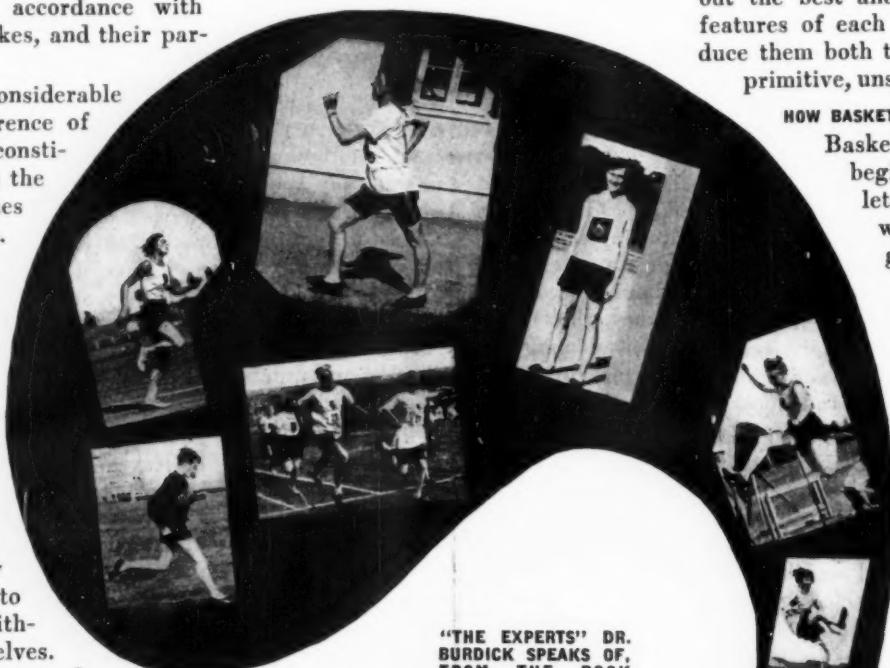
We have a highly-organized program of athletics to the degree that this year we had a state championship in field ball; 115 high schools out of 153 had representative teams of field ball, playing a championship in their own county. Then the neighboring counties played a game against one another, and finally, we had a game between the two shores of Maryland, separated by the Chesapeake, the final game of the series. The winner on the eastern shore was Chestertown.

They started their championship by bringing together the groups in a conference. They had a tea party socially before the contest started. The Catonsville team that came from Baltimore County on the western shore, had been playing, having thirty-seven teams of field ball within their own school during the fall and out of that they developed a representative team that won the county, inter-county and final western shore championships.

That last day, the Catonsville girls were collected from all over that particular end of the county and caught a boat that took them to the eastern

shore of Maryland, leaving home, some of them, at half-past five so that they might have the full day for this particular game.

The Chestertown people had a run of forty miles in automobiles, and they met in a hotel common to both teams, under the leadership of the Playground Athletic League which conducts the state championships as the agency selected by the State Board of Education.



"THE EXPERTS" DR. BURDICK SPEAKS OF FROM THE BOOK "ATHLETICS FOR WOMEN" BY F. A. M. WEBSTER. (Frederick Warne & Co.)

They introduced the teachers of the two teams and then they had dinner together. The various competitors — goal-keepers, various halfbacks and others — ate together and conversed together during the dinnertime. After dinner, they went upstairs and danced. Then, in the afternoon, they played their game, shaking hands before and after the game, having a good time with no bitterness, just team rivalry and a fine game.

After the game, they were entertained at tea by the local high school girls in the high school.

That probably illustrates what I mean by girls' athletics as a part of

the education of girlhood. That is the plan and purpose and hope, that the kind of athletics will be carried out which will be useful and helpful to the girls.

We believe that Charlotte Perkins Gilman, when she urges that little girls should be forbidden to play with dolls lest they become thereby feminine, is wrong and we also believe that the only sound inference is that education should be directed toward bringing out the best and most characteristic features of each sex, rather than reduce them both to a common level of primitive, unspecialized animality.

#### HOW BASKETBALL WAS STARTED

Basketball was taboo in the beginning in girls' athletics because there were no traditions of games throughout the city or state. We started our young people with dodge ball, with a progressive program of simple things and attempted to build traditions and on that basis we had a state championship such as I described. The state championship grew out of the wishes of the people and was not suggested by the educational authorities first. We had a great many requests for more inter-school competitions, after they had learned and established certain traditions of behavior for the purposes of recreation and education from the viewpoint of taxation to pay for it. We have to be, I think, on the basis that we are doing things in order that people shall behave properly toward one another, get along better together and socially improve. On that basis, we established our particular program.

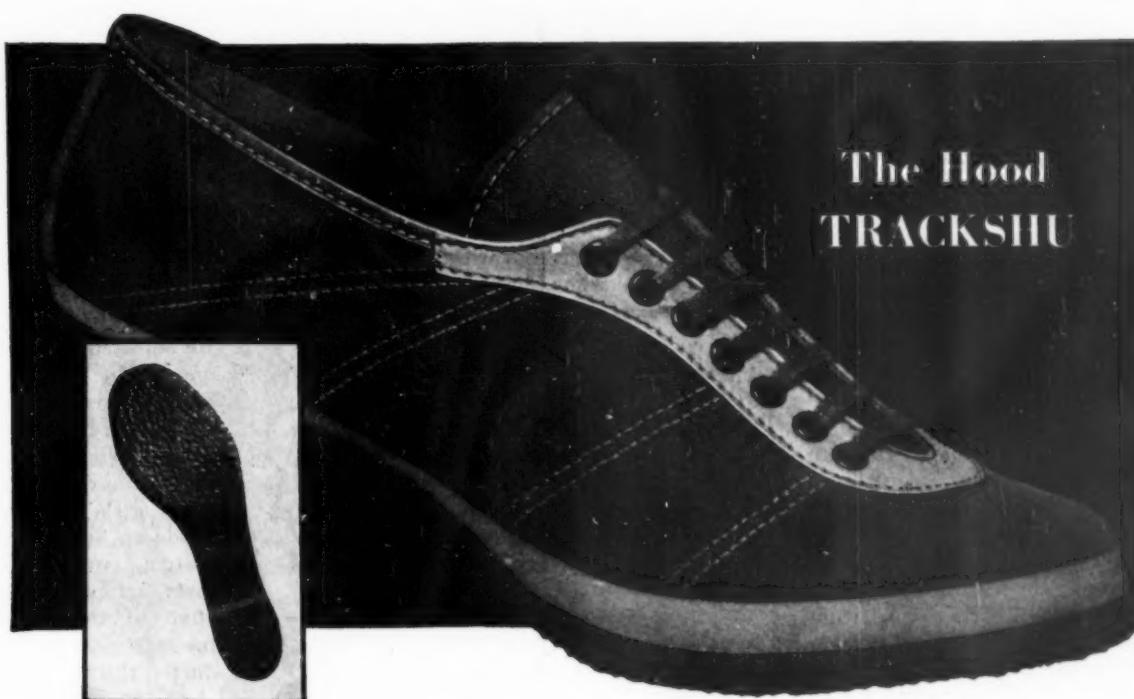
It was built up slowly. In the first year of our athletics, throughout the State of Maryland, for instance, the only thing we had was a badge test. We knew every individual was interested in his own particular advancement and we suggested a simple badge test for girls similar to the one started in New York in 1904 in the P. S. A. L. We started the simple badge test which fifty per cent of the eleven-year-olds should pass.

The next year, we tried dodge ball  
(Continued on page 14)

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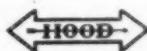
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and we allowed all the different girls to try it in the different schools of the state. After we had played dodge ball a couple of years, we separated the high school and grade school girls in a competition and had other games of more complexity as time went on.

In the beginning, the girls throughout our state couldn't throw a dodge ball twenty-five feet. We had to change the size of the dodge ball circle from year to year because of the increased skill of the children.

Then, after we had gradually made these traditions, we first had a game where there was no personal contact. Girls don't want a warlike game of combat and we have tried to follow the likes and dislikes of the girls rather than to suggest something that looked all right from our viewpoint. My great difficulty, as a man administering girls' athletics, had been to find the initiative on the part of the girls for the kind of new games that are necessary if we are to have a progressive program. I had the opportunity of appointing the first women's committee on basketball of the American Physical Education Association in 1917, with Miss Burchenal as the chairman. I begged that group and the committee to suggest games we could try out. We couldn't get these suggestions, so we had to do the best we could with what we could think up ourselves.

The difficulty was, when we started out in this situation, to try to get the girls themselves to suggest games and play a wider variety of games. The girls had been out of the picture up to then and we had to suggest new games in order that we could try them out for a short period. We were up against objections. Most all other people throughout the country believed we ought not to have girls' competition although we have open spaces that you don't have in the city. We also found objection in the fact that many states had already ruled that there should be no girls' competitions because of the difficulties they had had. Most of the difficulties, I think you will find, of inter-school competitions have been from the method, not from the games; from the people who have been han-

dling it as officials and leaders and not from anything inherently wrong with the sport itself.

Maryland has kept within the rules of girls' athletics as suggested at the Springfield Conference of the A.P.E.A. with the exception that it has allowed travel. Travel in itself has not been harmful, providing it has been directed as a social procedure.

We have the state championships of our girls in volleyball every spring. We bring all the girls who have won county championships to the State Normal School as the guests of the State of Maryland. We

are the hosts. They are our guests. They come there the night before and we entertain them as friends. We build it up as a social procedure, not as an athletic spectacle. The next morning they have their games and competition. We regulate the length of time that the games should be played. Last year, in our girls' carnival, we had 1890 girls playing dodge ball at one time on one armory floor. There were two tournaments of ninety and ninety-four teams. No girl played over thirty-eight minutes in the whole morning. In other words, you may regulate by method or plan the amount of competition, providing you set it up on a proper, well-thought-out basis.

Volleyball we regulate the same way as we regulate our dodge ball—three-minute quarter in and three minutes out. That gives you a twelve-minute game. On the second round, only two minutes, and thereafter one and one-half minutes. With a 128 team tournament, you can run it off with the child playing thirty-eight minutes in a tournament.

The setup of the activity program for girls should be adjusted in accordance with the girls' own physical differences. Why there is a continued insistence that we shall have boys' events

for girls, I never have understood.

The average boy is built somewhat like that (see drawing). The girl is shorter, has rather narrow shoulders and broad hips. Considering the distribution of weight and everything else

it is impossible for a girl to do what a boy can do. There are only five percent of girls who are built like boys. If you read Webster's book *Athletics for Women* and look over the experts, you will notice that they are all built like boys. We have been handling physical education and athletics on the basis of a boylike girl and that is the reason we have failed

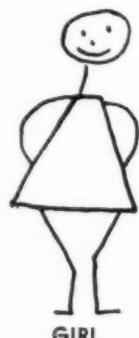
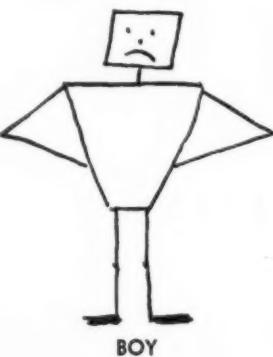
to meet the needs of the ninety-five percent. The right program, such as we believe ours is, calls for general participation.

In a program we attempted in the State of Maryland on the badge test proposition, of the 42,463 girls from the fourth grade up in all the schools outside of Baltimore we had 17,332 complete the test; 23,828, or 56 1/10 percent of the girls themselves participated in the badge test because it was regulated in accordance with their build.

In a carnival for girls, where we selected events in accordance with the likes and dislikes of girls, in the country town of Salisbury, on the eastern shore of Maryland, where there are only about 1300 girls from the fourth grade up, in the whole county system, covering an area of forty miles square perhaps, 1083 of those girls entered for the carnival. We conducted this in an armory, 70 x 100, and had 787 actually participate because it was a program based upon the structural development of girls and upon their fundamentally different ways of doing things.

Havelock Ellis in *Man and Woman* says very distinctly, men do things that way (pushing (Concluded on page 32)

GIRLS' WINTER INDOOR CARNIVAL IN BALTIMORE—FOUR SIMULTANEOUS VOLLEYBALL GAMES



# PLAYING IN THE WATER

Mr. Eastwood, of New York University, lectured before the Wingate Memorial Foundation on water games. His lecture is printed here in part.

**P**LAY is a biological necessity. We must be active to live. Those individuals who are not active, we say in the vernacular, "pass out of the picture." They assume the horizontal. This is due to the biological drive or pull to activity.

Play is a psychological need. Play is interesting and it gives the opportunity of learning a new skill in an interesting way. Therefore play has a psychological drive.

Play is sociological. We play also for social approval. We might say that this is the sociological drive. You say, "I am doing this because I get a 'kick' out of it." You do things because you get a kick out of them, and you obtain that kick from someone's else reaction to you—social approval, if you wish.

Game situations give an individual an opportunity to obtain social approval. You see individuals commend each other in games when someone makes a good play. What does this social approval depend on? It depends on success. So remember, in all your games, to give every individual some chances of success.

#### LEARNING TO PLAY

You will find that you have laws of learning to consider when teaching a new game. First you must have the individual want to play the game. Then that individual will want to continue to play so as to become more proficient, because he anticipates the feeling of pleasure which accompanies success.

What has this to do with the problem of swimming fears, that we all know so much about, and so little how to correct? In the game situation, we have the opportunity of overthrowing to a certain extent the fear of loss of support which is often experienced in the water.

\*We have considered that games are enjoyable and that we learn many skills by playing. Games, or some of them, may be used in reconditioning

"The more young people we can teach to swim, the more individuals we will add to society who have learned something for other than economic reasons. Education for enjoyment and education for other fine living are not in need of defence. One has only to observe the mistaken zeal of those who think of life in terms of financial rewards, trusting somehow that later on, when success comes, happiness may be bought." JESSE FEIRING WILLIAMS.

swimmers and removing swimming fear. I want to stress the need for a proper attitude on the part of the instructor. The attitude of the teacher may ruin the whole game. He may stand on the sidelines and let the game proceed and never enter into the spirit of it.

In games, you should notice one item that may ruin the interest in play when swimming—the coldness of the water. I will try to give you an example later on as to how you can use warming-up exercises in a play spirit to get warm. Some who are instructors in swimming pools know it is true that pupils get cold and can't listen to instructions. The value of play is then ruined.

How should we select games that are the most joyous to the group? In answer I am going to mention several rules that should be remembered.

1. The rules of the game should be few and simple. Involved rules will ruin a game. The ideal games are where you throw the ball in and have as few rules as possible.

2. That there should be activity for most of the individuals most of the time. Let us not in our games develop "spectatoritis."

3. Remember that we should not require a large amount of equipment. The pool is the natural facility that you have. Have as few other things in addition as possible.

Then of course, all know the following:

4. Adapt the games to the age of the child and to the sex.

5. Adjust your selection to the immediate interest of the individual. I may change the name of the game just because of an event that has

stood out in the newspaper, and swing my interest into that line because of some headline that has appeared in the paper. Be sure that the headline is educative, though, and proper. Some of the newspaper headlines are not very educative.

6. In high schools there is usually a corrective program. Remember, you have a wonderful opportunity in water therapy to use the swimming pool for specific groups—that is, corrective groups.

7. Don't set up a game that is going

By FLOYD EASTWOOD

to give the possibility for a poor swimmer to lose confidence and thereby develop an initial fear of the water.

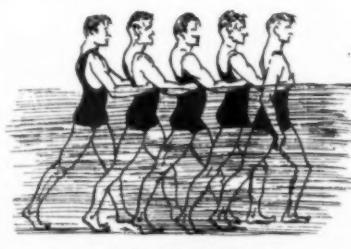
8. Finally, select games which in the main have the opportunity of being recorded and able to show individual progress; call them achievement charts if you wish; call them what you will, but something that gives a picture of individual improvement.

I want you to appreciate that I am not offering water games as a panacea for teaching swimming. Yet I do say that too much of our instruction is so formalized that it has no appeal. Every period should include at least five to eight minutes of games and this part of the period should never be eliminated. Sometimes you and I learn to

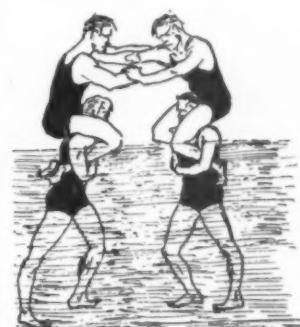
swim by playing games, many of us learned in the swimming hole, while some of us have tried to be taught in swimming pools under formalized instruction for years and never been able to learn.

The best instruction, I believe, is the squad system where you develop a system of helpers. The squad size should be anywhere from four to twelve, but I would suggest keeping it around eight.

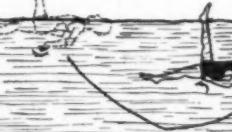
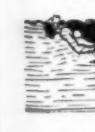
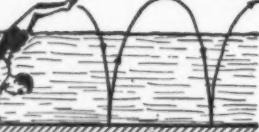
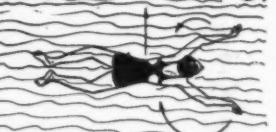
When we have our classes and squads arranged how are we going to teach the game? I first want you to consider that natural activities are the hardest to teach. The reason generally is that we haven't thought through the difficulties that lie ahead. May I suggest these steps that perhaps will overcome some of them. First, name your games, and have that name short and catchy. Use a little ingenuity. Second, give a short explanation of the game. Make it short but explain the rules clearly. Third, give a short explanation of the formation the players are to take in the pool. Fourth, have them ask questions. Fifth, answer the questions, if there are any, on the formation, or the rules of the game before they go into the water. Sixth, tell them to take the described formations that you have given them. Seventh, ask if there are any more questions. With regard to questions, may I also suggest to you that you say, "Hands please," because everyone is at first unsociable in the game situation and in this way you make them conscious

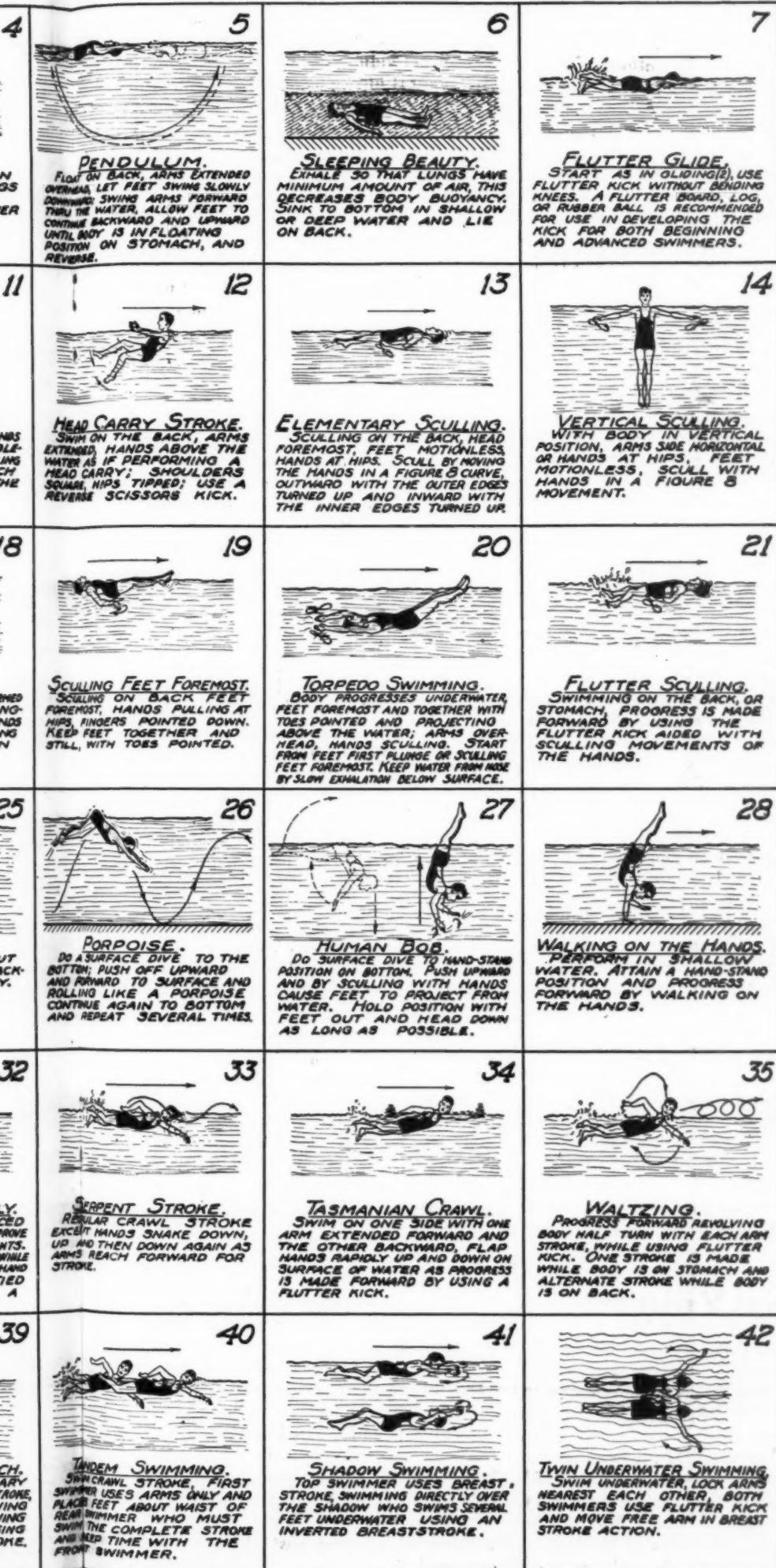


THE CENTIPEDE



HORSE AND RIDER

 <p><b>TURTLE BACK FLOAT.</b> Squat down in shallow water and grasp ankles; bring chin to chest and curl up into a tight ball. This demonstrates body buoyancy if person floats. If person sinks there is no buoyancy.</p>	 <p><b>GLIDING ON THE WATER.</b> Deno forward at the waist, push off from side or bottom of pool, glide for distance. Keep hands together, feet together, face under water, and body in full stretch-out position.</p>	 <p><b>VERTICAL FLOAT.</b> Start body in vertical position, arms side horizontal; take deep breath, move head backward until nose and mouth are above water. When necessary exhale part of breath quickly, immediately inhale. Hold motionless position against time.</p>	 <p><b>LOG ROLLING.</b> From floating position on back, arms and legs stretched in straight line, roll over and over rapidly.</p>	 <p><b>PENDULUM.</b> Float on back, let arms and legs swing from side to side, continue back and forth until body is in position on reverse.</p>
 <p><b>TREADING WATER.</b> Using legs only, in slow rhythmic scissors movements; keep head and hands above water. Compete against time.</p>	 <p><b>DEEP WATER TEST.</b> Throw up one hand, sink until fingers disappear below surface; come up, move over a few feet, repeat but bring body to sudden stop by spreading legs wide and kicking a vigorous frog kick.</p>	 <p><b>MARCHING ON THE WATER.</b> While lying on the back with hands at sides, progress forward by a pedaling action of the legs which pulls the water slightly toward the body.</p>	 <p><b>BICYCLE SWIMMING.</b> Lie on the side with hands placed as if grasping handlebars; progress by a pedaling action of the legs which pivots the body about the head.</p>	 <p><b>HEAD CARRY.</b> Swim on the back with arms extended, head above water as if a head carry square hips, reverse sc</p>
 <p><b>SPINNING IN THE WATER.</b> Fold knees to chest, spread arms wide apart, scull forward with one hand and backward with the other causing body to spin around. Change direction occasionally.</p>	 <p><b>WATER WHEEL.</b> By sculling with hands over head and spread apart, perform a series of backward somersaults with body in layout position. Inhale quickly through mouth when face comes to surface, keep water from nose by slow exhalation below surface.</p>	 <p><b>SUBMARINE.</b> Scull on back, inhale, lift one leg to vertical position then pointed. Scull palms turned up, keep moving forward and slowly submerge. Progress several yards underwater, face up; then scull palms down, rise slowly, leg first as periscope on submarine.</p>	 <p><b>SOMERSAULTS.</b> Forward somersaults performed by tucking knees and bringing chin to chest as hands scull in backward scooping motions. Do several in succession.</p>	 <p><b>SCULLING.</b> Sculling on the back, forehand, hands fingers, keep feet still, with</p>
 <p><b>SHORT MAN BACK STROKE.</b> Scull on back with hands at sides, bend body at waist so that only toes and head are above water, has feet, gives impression of a very short man swimming on back. Best effect in dark water or when performed at a distance from spectators.</p>	 <p><b>CRAB SWIMMING.</b> Scull backwards while lying on the stomach. Use flutter kick with toes hooked, hands scull with pushing movements in front of head.</p>	 <p><b>SURFACE DIVE.</b> From a breast or crawl stroke, lift hips by downward stroke alongside body, duck head and jackknife quickly, straighten legs overhead to hand-stand position, dive to bottom without swimming.</p>	 <p><b>DUCK DIVE.</b> Do a surface dive, but keep hands at sides; jackknife or tuck quickly.</p>	 <p><b>POPPIN'.</b> Do a surface dive, bottom; push and forward, rolling like a cork, continue again and repeat</p>
 <p><b>HAND SPRINGS.</b> Attain a hand-stand position in shallow water, allow legs to go over backwards and stand up. Continue several times.</p>	 <p><b>BEGINNERS BOBBING.</b> Grasp side gutter of swimming pool with both hands, inhale thru mouth; bending at hips and knees duck below surface of water, exhale forcefully thru nose. Rise high enough above surface to obtain another breath, repeat as many times as possible.</p>	 <p><b>ADVANCED BOBBING.</b> In deep water, body in vertical position, inhale quickly thru mouth, sink below surface and exhale forcefully thru nose. Swing arms downward and return to surface for breath, repeat as many times as possible.</p>	 <p><b>SWIMMING ARMS ONLY.</b> For beginners and advanced swimmers who wish to improve and strengthen arm movements. Keep feet together and still while arms move in alternate overhand stroke. A water polo ball tied between legs will give a better body balance.</p>	 <p><b>SERPENT.</b> Regular crawl, except hands are held up and then arms reach stroke.</p>
 <p><b>UP-STREAM SWIMMING.</b> Bend at hips and swim crawl arm action but go backward instead of forward by drawing arms thru water with minimum amount of effort as a vigorous flutter kick drives body backward.</p>	 <p><b>CRAB BREAST STROKE.</b> Swim breaststroke but move sideward instead of forward by pulling inward very hard with one arm and easily with the other.</p>	 <p><b>CROSS CHEST CARRY STROKE.</b> Swim on one side using correct or reverse scissors kick with side arm pull parallel with surface. Hold one arm out of water or carry weight on hip.</p>	 <p><b>REVERSE FOR APPROACH.</b> Swim toward an imaginary subject using any good stroke, reverse quickly by drawing arms thru water with minimum effort as a vigorous flutter kick drives body backward.</p>	 <p><b>TANDEM.</b> Swim crawl, swimmer uses place feet a rear swimmer swim the course and need time from swim</p>



## CLASSIFICATION AND ADDITIONAL STUNTS

### FLOATING.

NUMBERS 1-6.

- A. FLOATING, ON BACK, ARMS AND LEGS EXTENDED.
- B. FLOATING, ON BACK, LEGS IN PROGRESS.
- C. VERTICAL SPINNING, BODY VERTICAL, HANDS OVER HEAD OR AT HIPS. SWING HIPS SO THAT BODY ROTATES SIMILAR TO LOG ROLLING.

### KICKING.

NUMBERS 7-12.

- A. SWORDFISH SWIMMING, LIKE FLUTTER GLIDE (7) EXCEPT ON BACK.
- B. TREADING WATER, 1. BICYCLE KICK, 2. FROG KICK, 3. DOUBLE SCISSORS, 4. EGG BEATER.
- C. WATER WALKING, TREADING VIGOROUSLY, AIDED WITH HAND SCULLING MOTIONS.
- D. FLUTTER BOARD KICKING, FOR PRACTICING ANY KICK, FLUTTER, FROG, OR SCISSORS.

### SCULLING.

NUMBERS 13-20.

- A. SPINNING THE TOP, SIMILAR TO SIT SPIN (18), FEET AND LEGS OUT OF WATER, REVOLVE ON BACK.
- B. SCRABBLE EGG, SIMILAR TO SIT SPIN (18), LEGS IN COMPLETE FROG RECOVERY, REVOLVE ON BACK.
- C. DOLPHIN SWIMMING, ON STOMACH, SCULLING HANDS AT HIPS; FEET TOGETHER, TOES POINTED, BACK ARCHED AND HEAD UP.
- D. BACKWARD SOMERSAULT, SCULL OPPOSITE TO FORWARD SOMERSAULT (18); TUCK KNEES, THROW HEAD BACKWARD.
- E. BALLET DANCER, DESCEND IN WATER 8 FT, BALANCE ON ONE TOE; MAINTAIN POSITION BY SCULLING ONE HAND OVER HEAD, IMITATE BALLET DANCER.

### SCULLING AND KICKING.

NUMBERS 21-23.

### SURFACE DIVING.

NUMBERS 24-29.

- A. CORKSCREW SURFACE DIVE, 1. LIKE SURFACE DIVE (24); DO FULL TWIST AS BODY GOES DOWNWARD.
- 2. DIVE SLOWLY PERFORMING SEVERAL TWISTS.
- B. BACKWARD SURFACE DIVE, FLOAT ON BACK, THROW HEAD BACK, SCULL AS IN WATER WHEEL (24), NO TOE TO BOTTOM.
- C. SPIRAL PORPOISE, AS PORPOISE (26); INVERT AT SURFACE, GO UNDER ON BACK, REPEAT SEVERAL TIMES.
- D. SOMERSAULT PORPOISE, AS PORPOISE (26); EXECUTE SOMERSAULT AT SURFACE AND CONTINUE.

### BREATHING.

NUMBERS 30-31.

- A. BOBBING FOR DISTANCE, HANDS TIED; JUMP FEET FIRST INTO DEEP WATER, PROGRESS BY ALTERNATELY PUSHING WITH FEET ON BOTTOM AND COMING TO SURFACE FOR BREATH.

### SWIMMING.

NUMBERS 32-39.

- A. SWIMMING ARMS ONLY, 1. BREAST, 2. SIDE.
- B. UNDERWATER GLIDING, SERIES OF GLIDES BACK AND FORTH ACROSS POOL; RACING DIVE START, NO SWIMMING MOVEMENTS.
- C. BATH TUB CRAWL, AS UP-STREAM SWIMMING (36), NO PROGRESS, REVERSE DIRECTION OCCASIONALLY.

### MORE THAN ONE PERSON.

NUMBERS 40-42.

- A. HANDSTAND PYRAMID, TWO OR MORE PERSONS IN WATER WAIST DEEP, EXECUTE SIMULTANEOUS HANDSTANDS LETTING FEET COME TOGETHER.
- B. KICK FIGHT, CONTESTANTS ON OPPOSITE SIDES OF FLUTTER BOARD, OR LARGE RUBBER BALL; KICK AS HARD AS POSSIBLE, FORCE OPPONENT BACK TO MARK.
- C. COCKFIGHT, IN WATER 2 OR 3 FT. DEEP SMALLER PERSON STRADDLES BACK OF LARGER ONE WITH LEGS AROUND WAIST. THIS TEAM TRIES TO UPSET ANOTHER ONE.
- D. CHARIOT RACE, LIGHTER PERSON STANDS ON SHOULDERS OF HEAVIER ONE; WAKE FOR DISTANCE OR IN COMPETITION.
- E. CHAIN DIVE, FIRST DIVER STANDS ON EDGE OF POOL, SECOND IMMEDIATELY BEHIND STOOPS AND GRABS HIS ANKLES, THIRD GRABS ANKLES OF SECOND, ETC. FOLLOW LEADER INTO WATER, DIVE RESEMBLES CHAIN.
- F. TANDEM CHAIN, AS TANDEM SWIMMING (40), SEVERAL SWIMMERS LINKED, SWIM IN UNISON.

## Water Stunts Chart

By ALBERT W. GRAY  
New Haven High School

Copies of this chart on card-board may be purchased for 25 cents each from Scholastic Coach Bookshop, 155 East 44th Street, New York, N. Y. For an enlarged copy, 32 x 28 inches, send one dollar. The enlarged charts are on extra heavy paper, not on card-board.

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# THANKS!

of the group.

### GAMES FOR BEGINNERS

May I suggest the following games for the beginners and give reasons for their values. The first is the *Turtle float*. Most teachers are familiar with this activity. The knees are brought to the chest, the chin on the chest, and the breath is held for a certain length of time. This is valuable in giving the individual a sensation of being able to float in the water. The second is the *Face-submerged float* which can be used either for time or distance. Then we have the *Steamboat* which is the method of pushing off in a *Face-submerged float* position. The hands are in line with the ears, and the legs are kicked up and down with the flutter kick. We use the *Log Rolling* to give them a sensation of changing position in the water. I am sure that most individuals are conscious of the fact that the beginner in the water cannot usually remain calm when he changes from one side to the other. A suggestion for this is the specific idea of rolling over and over, hands over the head, for two or three times. Competition in this comes between squads—each one who does it twice scores a point for his team or squad. Of course, advanced swimmers can do a variation of log rolling using the arms, turning continually and progressing forward first with the crawl and then with the backstroke.

Then there are the group activities such as *Circle Bobbing*; holding hands in a circle and ducking underneath the water. *Poison* as it is played in the gymnasium can be played in the swimming pool. The *Centipede Race* with individuals lining up, one in front of the other, with the hands around the waist of the man in front, and using the lock-step across the pool. This gives a feeling of balance in the water. Most teachers are familiar with *Cat Fight* but some call it *Horse and Rider*. One person sits on another's shoulders, the top man trying to force the other rider off. The *Bobbing Relay* is another game. *Scramble* is a game similar to water polo, but it is played in the shallow end of the pool. Then

there is the *Wheelbarrow Race* which gives you an opportunity of supporting an individual and as well to teach him several of the elementary strokes.

### GAMES FOR FAIR SWIMMERS

The second group of games is for fair or advanced swimmers. One objective is to improve form and water confidence. A good individual activity is jumping into the water and doing a front somersault. Of course you are familiar with the porpoise dive—jack-knifing to the bottom and pushing up to the surface and leveling off for another dive. Double or triple swimming are very good and can be used with the breast stroke, back stroke or the crawl. It is very helpful in developing swimming strokes, especially the leg stroke. Follow the leader is another game which is interesting. First, dive in; second, reverse crawl; third, the dog paddle; fourth, the dog paddle with the flutter kick; and finally, sinking and leveling off. One team may compete against the other for speed or form, in a restricted area.

### GROUP ACTIVITIES

Start off in shallow water and tread water with hands on the next individual's shoulder the length of the pool. There should be four men in the group, with their hands on each other's shoulders and just a leg kick is used. We have also the game that is played with one individual in the middle of a circle and the other individuals holding hands in the form of a circle and trying to force one of their number to touch the swimmer who is treading water in the middle. There is also the arch relay, which is swimming underneath each other's legs while the person standing must scull with the hands while keeping the legs wide apart. In shallow water, of course, they can stand on the bottom. Water Kick Ball as a team game is most interesting and can be used in schools very well. It is similar to baseball except that the ball is kicked instead of batted.

The instructor's attitude in presenting a game, and his manner of voice and action during the game, are strong influences on the way the players will take to it.

### Pivot Variations

(Continued from page 6)

cover No. 1 he is screened off by No. 1's teammate, No. 2. Regardless of the personal contact, the foul is on No. 2 in the Eastern Intercollegiate League and perhaps elsewhere. For the play to be legal in the Eastern League, No. 1 would have to pass to No. 2. The effect would be the same, and the play would be legal because No. 2, the screener, has possession of the ball.

My objection to the rule as it is

written in the book is that players who are good actors can fein contact, and thereby receive a free-throw when there was no contact—only play at close quarters. The Eastern League interpretation clearly defines the screening from the blocking, by allowing such interference only when it is caused by the player who has possession of the ball. All pick-off plays in which an offensive player serves as nothing but a human obstacle, are thus outlawed.

## Ideal Posture Does Not Exist For Everybody

**A** STUDY of postural defects, made by Dr. Winthrop M. Phelps, professor of orthopedic surgery at Yale University, and Robert J. H. Kiphuth, Yale swimming coach, shows that there is no ideal posture for all persons, although boys from time immemorial have been accustomed to look upon champion athletes as models of physical development. The investigators have come to this conclusion after four years work with, and study of, students at Yale and three secondary schools and one boys' camp.

Ideal posture varies for different age groups, different types of individuals and different conditions of life, they have found. Defects in posture arise commonly from unfavorable environmental factors and from disease of the physical organism, and correction is, therefore, frequently a matter of dealing with underlying factors, rather than giving exercises. Hence, prevention is obviously a better approach than an attempt to cure defective posture.

Although much knowledge has been gained from the field of physical education concerning corrective exercises and the development of good posture, much of the work in this field has been done without regard to other fields of knowledge, Dr. Phelps and Mr. Kiphuth say. This isolation has been productive of incorrect conclusions and frequently the corrective exercises have been given without due regard to body mechanics and to the physical and environmental conditions.

### EMPHASIS ON LINE

Young men and athletes should be made as conscious of correct line and body architecture as they once were conscious, and in some measure still are, of tremendous musculature. The emphasis should be on line and function rather than on muscle bulk. The present mechanical derivation of ideal posture which has been arrived at through a study of proper bone, joint and muscle alignment will often reveal obvious defects in the most perfect of athletes. It is manifestly impossible for the bulk of population to undertake a mode of life similar to that of the athlete in training; therefore, it is decidedly wiser to eradicate the defects and to live a normal life than to hold defects in check by an extreme adherence to an athletic program, they advise.

Dr. Phelps and Mr. Kiphuth have developed exercises based on the fundamental principle that a strengthened muscle shortens and a weak one becomes longer. The exercises are designed to strengthen a certain muscle or muscles, to stretch opposing muscles, and to give co-ordination, poise and equilibrium, so that when the body is in equilibrium it is poised without the aid of much muscle power.

The adolescent age, rather than the pre-adolescent or pre-school age, is the time when corrective exercises should be given, they have found.

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**M**EMBERS of the Illinois High School Athletic Association have voted to employ the ten-second center-line rule in all official basketball games this season but voted down the three-second pivot rule, 236 to 226.

It was also decided that a line shall be drawn through the center of all floors more than 80 feet in length. On all floors less than 80 feet in length there shall be two lines drawn parallel with the end lines, one 42 feet from each end, thus affording each team 42 feet of floor space in the front court.

Kansas high schools, like those of Wisconsin, have voted against accepting the new basketball rules. They will not even use the ten-second rule.

Chicago schoolboy football fans for the first time in years saw no official city champion crowned. The city championship has been determined heretofore by the winner of the Public School league playing the winner of the Catholic league. However, this season Morgan Park, champion of the Public School league, after playing eight games decided not to play for the city championship when twenty fathers of Morgan Park football players protested. Said William Bowlin, speaking for the parents and explaining why they did not want their sons to play another game even though the receipts would be turned over to charity: "The charity appeal is strong but my boy's life is worth more. The team has had a tough season. The boys have played under conditions which no one would ask a college team to play. They accomplished their purpose when they won the public high school championship."

Speaking of great football teams, Seaman Rural high school, on the northwestern outskirts of Topeka, Kansas, has ended the seventh consecutive year without a single defeat on the gridiron.

Out of the 59 games played, Seaman won 52, tied seven, lost none. Only 12 points were scored against the school this year; six in 1931 and none in 1930. Charles

Logan, principal of this little school of 300 students, is also the coach. Mr. Logan is a former Washburn College player.

Probably the gamest lad in football this year was Lester Fulton, 18, right tackle on the Collingwood High school football team of Cleveland, Ohio, who twice in four weeks gave blood in order that his father's life might be saved.

The second blood transfusion was made the night before the game with Cleveland Heights. Fulton said nothing to his teammates or coach about it and played anyway, helping his team win. His father is recovering.

The 40th annual Thanksgiving day football game between East and West high schools, Aurora, Illinois, was played with a crowd of 10,000 in attendance. The 40-year unbroken rivalry between East and West high schools is one of the oldest public school series in the country.

With Athletic Director Amos Alonzo Stagg presiding for the last time, the annual University of Chicago's Christmas week scholastic basketball tournament brought 32 of the finest teams in metropolitan Chicago into competition. The meet was held from December 26th to December 31st; each team being given twenty dollars per game for expenses.

The tournament is the 15th of the interscholastic basketball events sponsored by Coach Stagg, and is a local continuation of the national tournament which the university was asked to abandon in 1929.

The following news item was clipped from the Cokato, Minnesota *Enterprise*. We hope that the trouble is not universal, and for your information tell you that the population of Cokato is 1000. "Basketball practice has been neglected this week because the ball is out of order. It is hoped the ball will be repaired so that the boys can get in trim for the next game."

MAURICE DAVIS

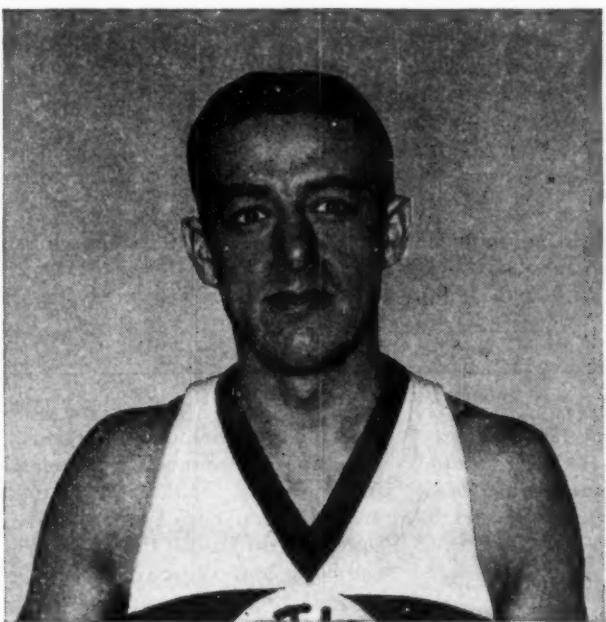
## Wide Influence of the Coach

**T**HE coach is an outstanding person in his community. Perhaps that isn't so true in the city as it is in the smaller places. But supposing we take two teachers as an example, the English teacher and the physical education teacher or coach. In most places everybody knows the coach. When he walks along the street, everybody recognizes him. The job of the coach puts him in a prominent place. You know that the more prominent your position, the more people there will be to criticize you.

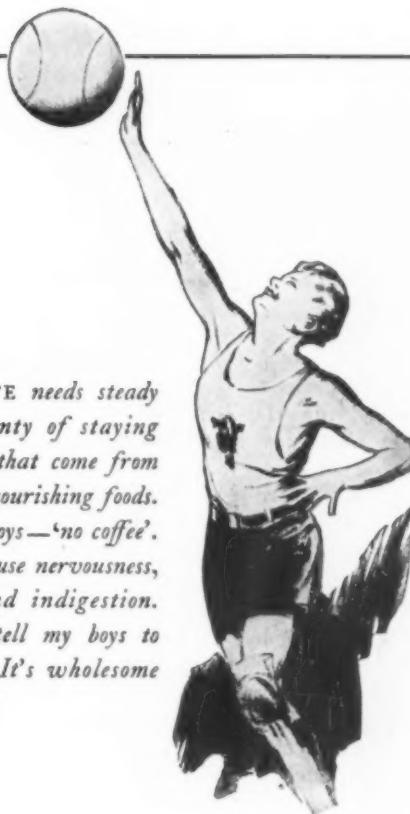
The physical education teacher or coach should be an enthusiast about his job. He should genuinely believe that his job is the most important one in the school system. If he doesn't think that, the job that he does won't be so well done. We get very enthusiastic about our athletic program and we go to extremes. We ought to be a little more enthusiastic about the objectives we have on our program.

HUBERT E. BROWN in *Aims and Methods in School Athletics*. (Wingate lecture).

# Another well-known Coach has a two-word training rule—"No Coffee!"



Nat Holman, Head Basketball Coach, College of the City of New York. Mr. Holman is a former star of the famous Celtics team and is the author of the recently published book, "Winning Basketball."



"AN ATHLETE needs steady nerves and plenty of staying power—things that come from sound sleep and nourishing foods. So I say to my boys—'no coffee'. For coffee can cause nervousness, sleeplessness and indigestion. That's why I tell my boys to drink Postum. It's wholesome and satisfying."

COACHES all over the country are warning their boys against drinking coffee, because they know coffee contains the drug caffeine. Physicians use this drug as a stimulant in certain cases. But do you know that the ordinary cup of coffee contains up to *three* grains of caffeine—20% more than the usual medical dose given to adults suddenly needing a drug stimulant?

One cup of coffee may have twice the effect on a 75-pound boy that it has on a 150-pound adult! No wonder physicians and physical directors condemn coffee for children.

But there's another important reason why coffee is harmful. Coffee takes the place of milk which is so important to so many growing students. The U. S. Dept. of Labor says: "Insufficient and unsuitable food and drink, such as tea and coffee instead of milk, is generally conceded to be the chief cause of undernutrition." And you see the evils of undernourishment—all too often!

No wonder coaches all over the country have written saying that they recommend Postum—and especially Postum made with milk.

Postum made with milk combines the wholesome

wheat and bran of which Postum is made with the nourishing body-building qualities of milk. Even youngsters who won't drink plain milk relish it with Postum. It is a delicious he-man's drink, if there ever was one! That's why it is served on hundreds of training tables. Recommend it to your boys—not only those on your teams but everyone who needs steady nerves and a strong body for the battle of life. Postum is a product of General Foods.

FREE! As many trial packages of Postum as you need for your team and candidates. Also as many copies as you need of "Pop" Warner's free training booklet, "Iron Men and How to Build Them." Just fill in and mail the coupon.

GENERAL FOODS, Battle Creek, Mich.

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# FOOD-FOR-ATHLETES BUREAU—BEVERAGES

By MORRIS FISHBEIN, M.D.  
and WILLIAM I. FISHBEIN, M.D.

As a result of the widespread interest in the food and diet articles that have recently appeared in *Scholastic Coach*, the service has now been expanded to include a regular department—the Foods-for-Athletes Bureau in which the various kinds of foods will be discussed by class. In this issue Drs. Fishbein take up beverages. Next month their article will center on the foods that go to make up a good breakfast for the high school student.

High school principals, coaches, athletic and health directors desiring frank information on any particular brand of beverage may obtain it by writing to Foods-for-Athletes Bureau, *Scholastic Coach*, 155 East 43rd Street, New York, N. Y. Questions pertaining to any phase of foods and diet are invited.

THE humorous columnists insist that Americans have all been thirsty for the last ten years. However that may be, the sensation of thirst is one of the most interesting that is investigated by the physiologist. The human being is about 70 percent water. The necessity for water in the body is far more pressing and continuous than the necessity for food.

As pointed out by Professor A. J. Carlson, a healthy human being can survive without food and with a decreasing physical efficiency for from 40 to 60 days. If however, the same man is completely deprived of water, he becomes uncomfortable after two or three days, feverish and delirious in from four to seven days, and he usually dies in from eight to twelve days. This is the course that is followed by men who are lost at sea without fresh water or who die of thirst in the desert.

When a man is deprived of water he begins at once to draw this substance into the blood from his tissues. Because of the importance of water it is common in any case of unconsciousness over a long period of time for a physician to see to it that water is injected into the body either by a stomach tube or under the skin.

#### EXCEEDING THIRST

When a person becomes exceedingly thirsty, his tongue, throat and mouth get dry and burn. Because of the anxiety he becomes restless; because of the lack of evaporation of water from the surface of the body, he becomes feverish. The sensation of thirst can be lessened somewhat merely by wetting the lips and tongue, but this is a satisfaction only to the sensation and cannot satisfy long.

There is one portion of the brain which is particularly interested in seeing that the needs of the body for water are satisfied. Obviously this is

#### DAILY CALORIC REQUIREMENTS OF THE HIGH SCHOOL STUDENT

A high school boy between ages of 14 and 17 requires 20 to 25 calories per day for every pound of his weight. Girls usually require slightly less—a girl 13 to 15 years old 2250 calories per day.

Nine hours of sleep	465 calories
Walking moderately fast 1½ miles	250 calories
School work for five hours	500 calories
Athletics and recreation (three hours)	600 calories
Night study at home (two hours)	175 calories
Work about the home	185 calories
Miscellaneous activities (two hours)	225 calories

Even though the high school boy weighing 120 pounds in an average day expends only around 2500 calories, the diet must supply about 3,000 to 3,500 calories because of the requirements for growth.

important since the water is necessary to the conditions of life. Some people drink a great deal more water than do others. Excessive thirst is brought about by excessive loss of water from the body.

Sometimes this loss of water is due to disease which puts a great deal more water through the kidneys in order to relieve the body of concentrated salts that are the products of disease. Sometimes the occupation of the person or the character of his sweat glands is such that he loses a great deal of water by way of the skin. In some instances, much water is lost from the body by the intestinal tract. Following hemorrhage with a considerable loss of blood, a person is usually intensely thirsty because of the amount of fluid that has been taken away in this manner.

All sorts of estimates have been made of the value of a human being. In a paper given by Dr. J. S. Elliot, president of the British Medical Association Branch in New Zealand, he said that man possessed enough fat to make seven bars of soap; iron enough for one medium-sized nail; sugar enough to fill a shaker; lime enough to whitewash a chicken-coop; phosphorus enough to make 2,200 matchheads; magnesium enough for one dose of salts; potash enough to explode one toy cannon; and sulphur enough to rid one dog of fleas.

Of the approximately 80 elements listed by the chemists, at least 29 have been located in the human body. These are carbon, oxygen, hydrogen, nitrogen, sodium, calcium, potassium, magnesium, chlorine, phosphorus, sulphur,

iron, iodine, arsenic, fluorine, silica, manganese, bromine, aluminum, lithium, copper, lead, zinc, vanadium, molybdenum, cerium, chromium, lanthan and didym. Of the latter elements the body contains only a trace. Nevertheless, modern chemical research is beginning to assign to these traces, functions of the greatest importance.

Water is composed of hydrogen and oxygen. The amount of water in the human body varies with the increase in years. Six months before its birth the infant is composed of 94 percent of water. At birth the water content has changed to 69 percent. When a man is 20 years old the water in his body constitutes 62 percent, and when he is 70 years old the amount has diminished to 58 percent. The body of the old man is drier and wrinkled. The water content of man closely approximates water contents as they occur in nature.

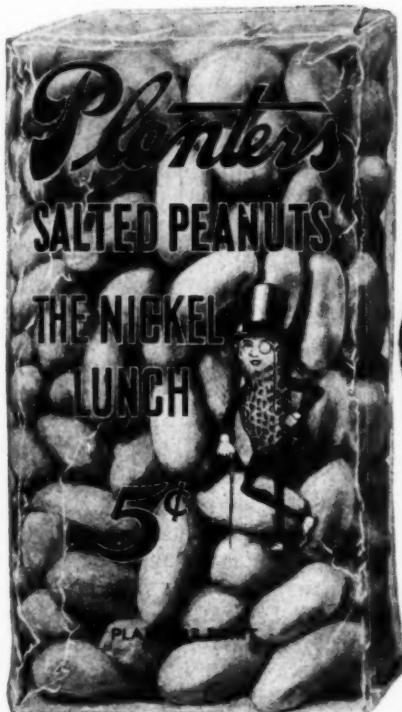
#### HIGH WATER CONTENT

An egg has 65 percent water, meat has 75 percent, fish has 80 percent, and milk has 87 percent. Some of the tissues of man contain more water than do others. For instance, the brain is 79 percent water, the kidneys 83 percent, liver 70 percent, and muscle tissue 75 percent.

These facts are of the greatest importance since they indicate how necessary water is to the body for the carrying on of its functions. Hence, whenever a person is paralyzed and unable to get water the physician sees to it that water is put in his body by injection or by some other route.

Often uninformed people express  
(Concluded on page 30)

# ENERGY IN EVERY OUNCE



*"The  
Nickel Lunch"*

It takes plenty of energy to play Ice Hockey. Where does Energy come from anyway? From the food that you eat. That's why it's so important for the athlete to watch his diet . . . eat the right kinds of foods . . . the foods that will produce the energy that strenuous exercise demands.

Planters Peanuts are just that kind of food. Planters Peanuts contain in abundance the elements that the body burns to furnish heat and strength. Measured in calories, Planters Peanuts are a richer source of energy than meat, potatoes or milk!

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# PLANTERS PEANUTS

# SHIFTING CROSS-CUT DEFENSE

By WILLIAM H. SIMPSON, JR.

*Mr. Simpson is director of physical education and athletics, and coach of basketball, at Trinity School, New York.*

THE zone defense originated in the West; and it was probably used most successfully at Kansas University by "Phog" Allen. There is not much of it seen in the East. I watched a very inferior Wesleyan basketball team outplay and outscore the Eastern Inter-collegiate Champions (Columbia University) 28-4 in the first half of the game played at Morningside Heights in 1930. The standing territorial defense was used. My championship team of 1927 was beaten twice, and the two opposing teams, unfortunately for us, used a territorial defense.

Up to this time I had not been very much impressed by the zone defense; but after these occurrences I changed my mind. I determined that my teams should know all about the zone defense—and a little more. I have been experimenting for five years, and now, I believe, I have something that will stop the average good team—the cross-cut zone defense.

Most of the playing averages that have been computed in recent years show that approximately 80 percent of the passing fails to gain its objective, that is, a reasonable shot at the basket.

I believe in a "ball minded" de-

**DIAGRAM I**—Player A dribbles down the side of the court and cuts into the center. This is where the first shift is made. No. 1 goes out and stops the dribble in the back court. He then drops back near the foul circle for any overhead pass. Nos. 2 and 3 close into the center territory towards player A. If the ball goes through, they drop back and cover the ball. As the ball goes through, the two guards smother the ball.

fense; that is one in which the defensive players are thinking in terms of snaring the ball—on their toes to intercept the pass, interrupt the attack by surprise. A keen sense of anticipation, supported by quick reflexes in starting from standstill (but not flat-footed) defensive positions, is essential if the defense wants to succeed against an attack of good passers. This keenness of anticipation is more necessary to the success of a zone defense than it is to the man-for-man. So, for players that are neither quick to start nor quick to foresee things and evaluate on the spur of the moment the movements of the attack, the man-to-man responsibility is probably the better defense.

If you are playing the new center-line 10-second Rule, you must have a fast breaking attack both on the offense and defense. When you get possession of the ball, you break for a score as a team; and when you lose possession of the ball, you cut for the defense as a team. An element of consolidated team play enters into the game—a thing such as you have never had before. Every man is in the defense and every man is in the offense—not playing the man, but always being "ball minded."

When you first scrimmage with this kind of defense you will find many passes getting through. Do not let this discourage you. Stop the play and have the boys fill in the particular zone through which the pass came. Repeat the play until you see results.

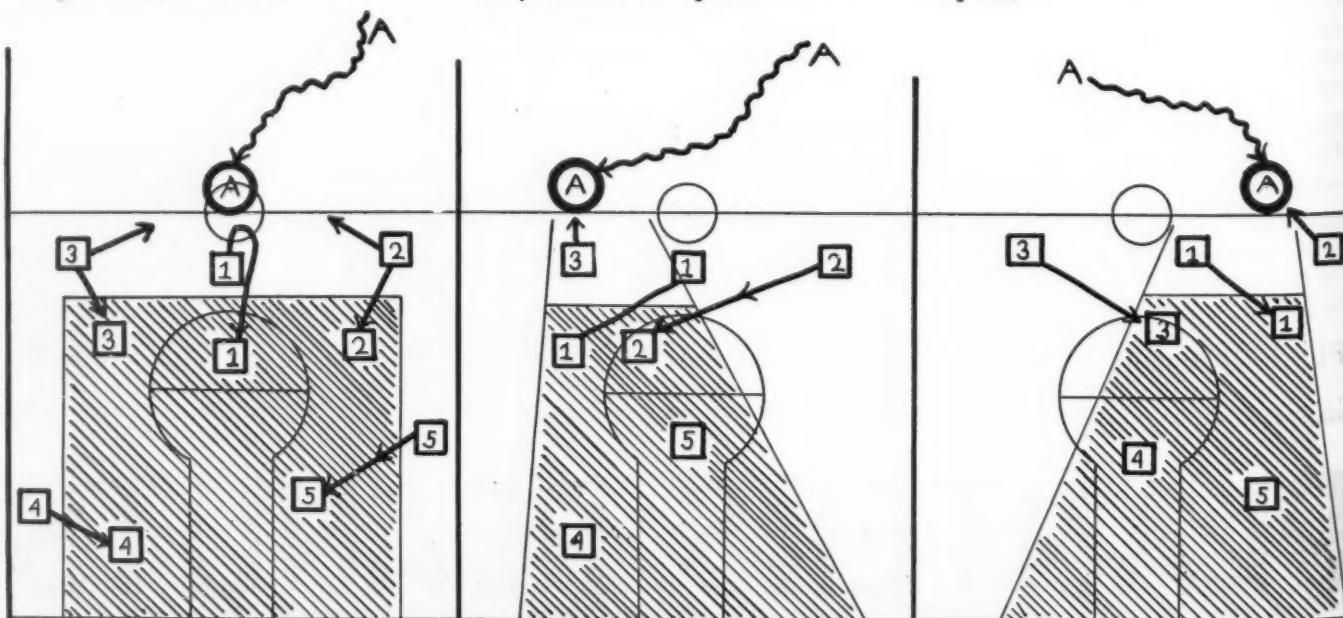
**DIAGRAM II**—A is bringing the ball through the right side of the court. Notice the change of the protected area. This time No. 2 stops the dribbler or the passer. Nos. 1 and 3 cut across to protect the scoring area.

To beat this defense you must send at least three men into the scoring zone. The passes made by these men must be accurate. When you get possession of the ball, you have four men cutting for the basket: the two forwards, the center, and one guard. The other guard stays back for any interception by the opponents. With this defense they do not take you out of position by feinting or passing to a trailer. You simply cover the dangerous scoring territory and hustle their passes, which eventually go out of bounds or into your possession.

In the accompanying diagrams the shifting crosscut defense is shown in its six major patterns. The shaded territory indicates the scoring area for each particular situation. In Diagram I the ball is brought through the center of the court. In Diagrams II and III the ball is brought through the right and left sides respectively.

The angle of the possibility of scoring has changed; but the principle remains the same. The defense, being "ball-minded," shifts so as to protect the territory in danger (shaded area) in such a way as to block all offensive passes by a system of cross-cut interceptions. Any possible-scoring pass by the offensive team (assuming the defensive shifts correctly) should be intercepted by a "cross-cut" to the right or left by the defensive player through whom the ball is passed (Diagram IV). If the offensive team uses a trailer it does not change the defense.

**DIAGRAM III**—A is bringing the ball through the left side of the court. Again you see the change of the protected area. This time No. 2 stops the dribbler or the passer. Nos. 1 and 3 cut across to protect the scoring area.



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## The Coach's Main Job; Wingate Contribution

By E. DANA CAULKINS

(Continued from page 4)

Hyman has not been "wasting his time on a lot of dubs."

Of course, the same system of organization cannot be used in all games and sports and conditions vary at each school. But the coach who is wise will fight tooth and nail for the opportunity to extend to as many as possible of the student body the benefits of his coaching and teaching of games. And he won't wait until he has an ideal layout of playing spaces, equipment, time and assistance. He will organize now to spread the benefits of his coaching as widely as possible under his present working conditions.

If the coach is responsible for the entire athletic program of the school his task is very difficult but his opportunity is tremendously enlarged. He must make himself, as near as possible, an expert in every athletic activity (in teaching ability if not in performance). But with wise planning and organization he can go very far in providing for every pupil the kind and amount of athletic activity which will give each individual the greatest benefit. He can steer many of his pupils into athletic activities which can be continued in later life. A varsity football player may be inveigled into taking a whirl at handball during the winter. A basketball player or a baseball player may find keen enjoyment in swimming, tennis or volleyball (especially if these so-called "minor" sports are organized on a keen competitive basis.)

The Wingate Memorial Foundation aims to help the coach only because the coach is the individual through whom the boys

and girls may have a finer program of athletics. We have tried to concentrate on gathering and spreading practical suggestions on

- How to play the game better.
- How to coach or teach the game better.
- How to organize better so that a larger number of pupils may enjoy the benefits of athletic sports and games.

Through the Wingate lectures conducted Saturday mornings in New York City we have brought the coaches and athletic teachers into personal contact with leading authorities in the various sports and games and related health and educational subjects. They have talked, they have demonstrated with players on the athletic field and in the gym. They have illustrated with diagrams and with motion pictures. Then through the publication and distribution at cost of the stenotypist's reports of these lecture-demonstrations we have made this instruction and inspiration available to all coaches throughout the world. Last winter we broadcast over a nationwide radio network a brief summary of each lecture-demonstration. This year in cooperation with New York University we have started the Wingate Athletic Course which will cover each year the coaching of one third of the sports and games of a school athletic program.

This course is recognized for graduate university credit. And by every means available we propose to continue gathering up the best information obtainable from experts in the various phases of athletics and to disseminate this collection of information for the improvement of coaching and playing and organizing technique.

The inspiration behind this program is that grand old athlete and exemplar citizen, the late General George Wood Wingate in whose memory this Foundation was inaugurated. The climax of his ath-

letic career was his 25-year presidency of the Public Schools Athletic League of New York City, through which he promoted athletics for a great mass of public school children. But he was himself a great example of all that an athlete should be. One might fairly say that he was an athlete "from the cradle to the grave."

As a very young lad, almost crippled by severe burns, a wise father began his coaching by teaching him to fence with two homemade wooden swords. When he was working his way through school he squeezed in two nights each week at Woods Gymnasium (one of the two gyms in the entire city of New York at that time). In the army during the Civil War and afterward throughout his mature life he continued his athletic activity, adapted in type to the succeeding age periods. He was at one time a leading gymnast, fencer, boxer and high jumper in the metropolis, and later excelled in rowing, tennis, golf and marksmanship. All through these 87 years, athletic activity was balanced with the other interests and responsibilities of a well-rounded life including a successful career in the legal profession. And in the latter years came his great contribution to youth through his long labor as President of the Public Schools Athletic League. Small wonder that on the death of this great athlete-citizen the children of the public schools of New York started a Foundation to perpetuate his memory and his labor for athletics. With nickels and dimes they established a fund of \$50,000 which has since been increased to \$118,000 by other friends of the General and supporters of the work being carried on in his memory. Through the income from this fund and through enlarged service rendered at cost, the Wingate Memorial Foundation proposes to carry on to the end that the youth of the world may ever increasingly enjoy the full measure of joy and benefit through athletics.

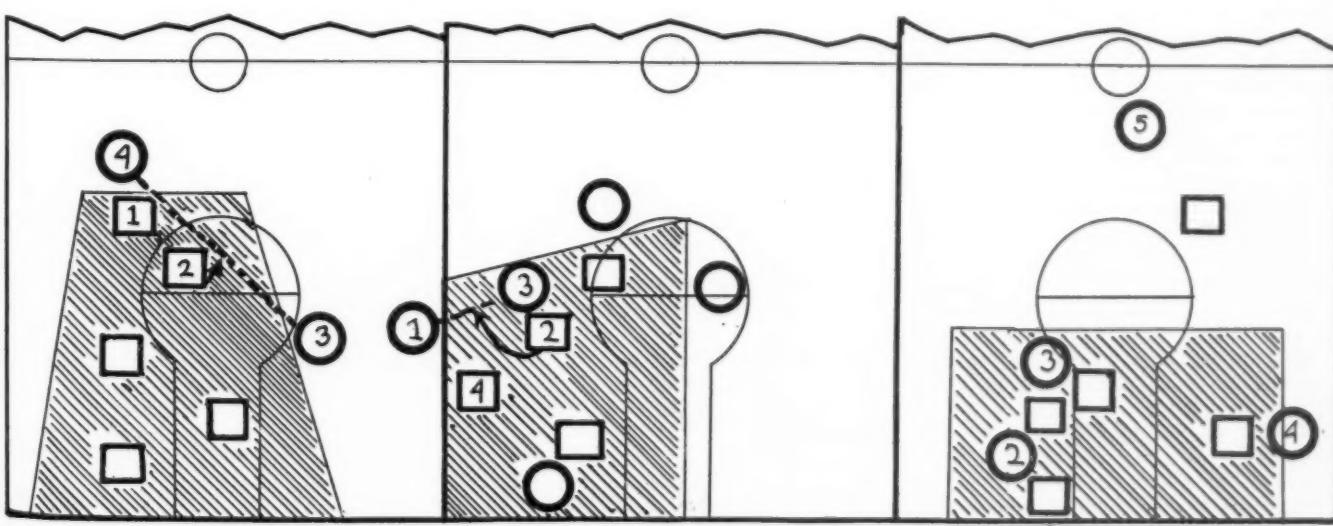


DIAGRAM IV—This illustrates how easily a pass can be intercepted. No. 4 is on the offensive team and passed to No. 3. All that No. 2 has to do is to step in one step and intercept for a score. Many boys reach for the ball. This is fatal in any kind of defense. The boys should be taught to cross-cut toward the ball; and not to reach for it.

DIAGRAM V—Here is an outside play showing how to protect the scoring territory for this particular setup. No. 1 has the ball outside and passes to No. 3 who cuts toward the ball. No. 2, defensive player, cross-cuts and intercepts. Here you can see the excellent position the players are in to cut for the basket.

DIAGRAM VI—The offense is spread under its own basket. Defense positions are adjusted accordingly—flat across the end zone. The protection of the scoring area should always be kept in mind. Here that is taken care of nicely.

# SOME WELL-PAID AND PUBLICIZED COACHES

The following article appeared in *Time*, the Weekly Newsmagazine, and is used with permission.

If you want to compile an All-American football team, a good way is to start with the best quarterback of the year. If anyone had been sufficiently enthusiastic to begin making up an All-American this way early in November, the first name might have been Orville Mohler, of Southern California. Quick, wiry and comparatively light (166 lb.), a licensed airplane pilot, president of the U. S. C. student body, Mohler was not on the All-American teams compiled at the season's close, because of an injury to his spine which closed his football career when U. S. C. was playing Stanford.

The fact that before 1925 Southern California was a second-rate power in Coast football makes it apparent that a significant change in Southern California's football methods occurred that year. In 1925, Southern California acquired its present coach, Howard Harding Jones. The Jones record at U. S. C. to date: 75 games won; 2 tied; 10 lost.

Never so famed as the late Knute Rockne, or Stanford's Glenn ("Pop") Warner, whose teams have lost to Southern California since 1927, Southern California's coach had an impressive record before he started to teach football west of the Rockies. Eleven years ago his Iowa team beat Notre Dame when the latter had won 22 games in a row. In 1921, Iowa won the Big Ten championship for the first time since 1900. When he went back to coach at Yale, whence he was graduated in 1908, Coach Howard Jones turned out the 1909 team that won all its ten games without being scored on and contained six All-Americans.

At Yale, Howard Jones's celebrity was later dimmed by that of his brother "Tad" (Thomas Albert Dwight) Jones, All-American quarterback of the Yale team on which Howard played end. Tad coached Yale football teams after Howard went West, from 1920 to 1927. Not until he had built Southern California up to its present status was Coach Howard Harding Jones recognized as a thoroughly high-grade football wizard. Even then his éclat was not heightened by "Jones System," like the Rockne and Warner systems. An adapter rather than an innovator, he uses both the Rockne shift and the Warner wing-back formations for an offense that combines Stanford's deception with Notre Dame's precision and speed. Versatile and open-minded, Jones transforms his methods to suit his purpose, as he did in 1927 when he changed his defense by bringing his ends in close to upset slow-forming plays behind the Stanford line. In a patchwork of other football systems that have proven effective, he uses the huddle to muddle and makes flexibility, the art of the unexpected, his only inflexible rule.

U. S. C. is the only major team in the U. S. that has no line coach. This is because Coach Jones makes the line his specialty and usually forms it of men who have previously played in the backfield.

Jones's halfbacks rarely carry the ball; they are for interference. His fullback usually lines up just in front of the quarterback, who does most of the ball carrying, must be able to pass, run, kick. Jones's deception is less a matter of complicated ball-handling, in spinners and reverse plays, than in varying formations. The Jones shift is used purely for disguising formations instead of for gaining momentum. The shift most frequently leads into an unbalanced line with both guards playing on the right of the center, the inside one

students' union, considers the reports of their scutings on Mondays and Tuesdays. After lunch, he goes to his office and attends to his mail. He gets about 40 letters when U. S. C. wins a game, 80 when U. S. C. loses. He reads them all carefully, dictates answers.

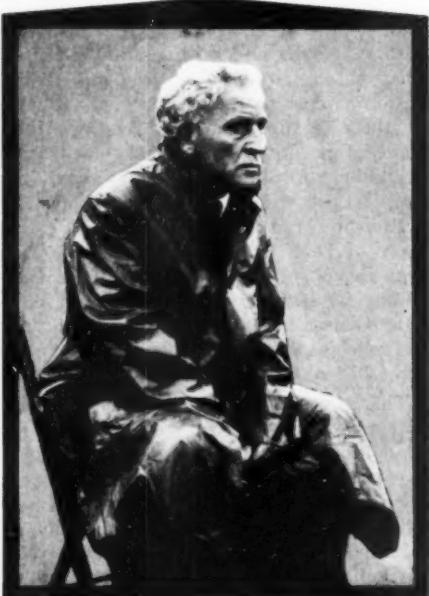
At 3 p. m. he goes to training quarters, chats with reporters while he dresses for practice. Practice starts officially at about 4, lasts till 5:45. Unlike many Eastern colleges, U. S. C. has no floodlights. Coach Jones never holds "skull practice" at night. Sometimes he takes his quarterback home to dinner. After dinner, a pile of poker chips appears on the table. Amazingly dexterous from long practice, Jones moves them to diagram plays, red chips for the line, blue for the backfield, white for opponents.

In his coaching, Howard Jones has certain peculiarities. He never curses and will not permit his players to do so. Instead of a trainer, he has a physician, Dr. Walter R. Fieseler, to take care of the players, blow the whistle at practice scrimmage, decide on treatment for injured players and when they are fit to play again. Before important games he makes no emotional orations. In a soothing voice he reviews what he wants the team to remember, reminds them what their opponents are likely to do and how to retaliate. He insists, to an almost eccentric degree, upon "clean" football, even in a game like the one against Washington last year. He dislikes football players who dramatize injuries on the field. When a man is hurt Jones seldom expresses sympathy till after the game.

When the football season is over Howard Jones leads an easy life. He is a partner and stockholder in his father's paper firm of Harding, Jones & Co., but he takes no active part in its affairs. He goes fishing in the Sierras, gives talks at business men's meetings, plays golf and bridge. Dressed in golf trousers, an old sweater and a grey hat pulled far down on his grooved and sunburned face, he potters about the North Hollywood bungalow where he lives with his wife, son, and four-year-old daughter, Carolyn, who sprawls about in a specially monstrous sandbox.

Amos Alonzo Stagg, 70, of Chicago, is the oldest football wizard in the U. S. He has coached 41 Chicago teams. He invented the shift, which Knute Rockne later improved and popularized. When he went to Yale he planned to enter the ministry. His interest in football defeated his interest in theology in 1889, when Yale made 698 points to 0 for its opponents. Amos Alonzo Stagg played end, made Walter Camp's first All-American. He went to Chicago to be Director of Athletics at \$2,500 a year in 1892. Last October Chicago's trustees voted to have Coach Stagg obey a University regulation and retire at 70, at the end of this year.\*

\*Stagg objected to retiring; said that he is good for some years yet. The University of Chicago would not make an exception to its retirement rule, which makes provision for a pension. Stagg insists that he will coach next year; if not at Chicago, elsewhere.



STAGG ON THE SIDELINES

for running. Three favorite Jones formations:

ETCGGTE	ETCGGTE	THCGGTE
H	H	H H E
F	F	F
Q	Q	Q

Opponents consider U. S. C. plays on the right side of an unbalanced line most dangerous. Plays on the weak side of the line are likely to be spins or reverses, an occasional quick plunge by the fullback.

On the Pacific Coast, where non-scouting agreements are not fashionable, Jones has an elaborate technique of espionage. Aubrey Devine, onetime Iowa All-American, has been scouting Notre Dame all this year. Stanford's Pop Warner said that U. S. C.'s Stanford spy, Cliff Herd, knew more about Stanford's plays than the team. Gordon Campbell scouted California this year. Scouting is part of the duty of U. S. C. assistant coaches who get about \$2,500 a season.

Howard Jones gets \$12,000. He earns one-third as much again from such activities as newspaper writing, which he does himself, cinema shorts, of which he made a series last spring, and sales of his two books: *How to Coach and Play Football*, *Football for the Fan*. In the football season he goes to the U. S. C. campus at noon, in an automobile presented to him after the Tulane game last year. He lunches with his assistant coaches at the

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Red-faced, 220-lb. Glenn Scobey ("Pop") Warner of Stanford\*\* has a personal rivalry with U. S. C.'s Howard Jones no less bitter than the one between Stanford's track coach Robert Lyman Templeton and U. S. C.'s Dean Cromwell. It started in 1908 when Warner was coaching the Carlisle Indians and Jones was coach at Syracuse, over an argument about the length of the halves. Pop Warner's salary is \$500 more than Jones's. He is supposed to receive further backing from Bunker Herbert Fleishhacker of San Francisco whose huge son played on the team 1927-29. In 1925, the year that Howard Jones went to U. S. C., the Warner system, based on the idea of placing both halfbacks outside the end, first attracted wide attention. Since 1928 when Stanford beat Army 26 to 0 variations of the Warner system have come to be used by almost every coach. Stanford's Pop Warner has been a coach for 37 years. He is credited with inventing the crouching start for linemen. He walks with a limp. Reporters dislike him because he is close-mouthed. At games he concentrates on his "system," lets his assistants make all substitutions. Warner amusements: making golf sticks and protective apparatus for his players, in a workshop behind his house; painting (like Illinois' famed Bob Zuppke), which he learned from a village sign-painter. His record at Stanford since 1924 is won 64, lost 11, tied 7.

Notre Dame this year scored a point a minute until it was beaten by Pitt, 12 to 0. This was an appalling surprise for Notre Dame's Coach Hearn ("Hunk") Anderson, who succeeded the late Knute Rockne.

Before Notre Dame beat Kansas, 24 to 6, he refused to let his players read newspapers, lest they be made vain. Notre Dame's line coach before Knute Rockne's death, Coach Anderson played guard on Notre Dame teams from 1919 to 1922. He uses the Rockne System without variations, has 140 plays in his repertoire this year.

Columbia's Coach Lou Little, acquired from Georgetown in 1930, has a nose as large and hooked as that of the bronze Columbia Lion which overlooks his practice field. He was an All-American tackle for Penn in 1916, again in 1919 when he returned from the War. His record since 1925, at Georgetown and Columbia: won 49, lost 13, tied 4. Columbia has lost no games this year. Coach Little's salary—estimated \$17,500—has been the highest for a football coach in the U. S.

When Coach Edward P. ("Slip") Madigan went to St. Mary's in 1921, there were 60 students in an old brick plant in Oakland, Calif. Now St. Mary's has 750 students, a \$2,000,000 campus in Moraga Valley. Coach Madigan is largely responsible for the change. In 1921, St. Mary's

played Stanford with 16 men on the squad, made 10 points to Stanford's 14. In 1926 and 1929 St. Mary's had undefeated teams. Coach Madigan was a Notre Dame guard under Knute Rockne and Rockne's predecessor, George Harper. He curses, roars at, jokes with his players in a booming voice. Before games he delivers lavish orations. Coach Madigan's quotations from Robert Louis Stevenson's *Leaves of Gold* (gold is St. Mary's color) so inspired his players against Fordham in 1930 that the team, 12 points behind, made three touchdowns in the second half, won 20-12. Last week, Coach Madigan failed to repeat his *Leaves of Gold* speech. St. Mary's got no touchdowns. During games he walks rapidly up and down the sidelines, pulls his hat over his ears, spits on his hands. St. Mary's record since 1925: won 52, lost 11, tied 3.

Herbert Orrin Crisler, first non-graduate coach in Princeton history, was hired last year from Minnesota for \$8,000 a year. So far he has earned it by building up, from the remnants of a team that won only one game in 1931, to one that last October held Michigan 14 to 7 and later smothered Lehigh, 53 to 0. Affable and optimistic, Coach Crisler does not object to his nickname "Fritz." He learned his football at Chicago where he was a crack end in 1920 and 1921. Pleased by the success of Coach Crisler, Princetonians were recently grieved to learn that grizzled little Keene Fitzpatrick, head track coach since 1910, football kicking coach and chief Princeton trainer for all sports, plans to retire at the end of this season.

At Minnesota, Coach Crisler was replaced this year by Bernard William ("Bernie") Bierman, who started coaching at Butte, Montana, High School in 1920, and worked up gradually till he turned out two Tulane teams that won Southern Conference Championships in 1930 and 1931. A Bierman legend: he has never shed a tear, shouted, raged or dropped a player from his squad. During the half, he reads to his squad from a small sheet of paper on which he has noted their mistakes. He played at Minnesota in 1916; he uses the Minnesota shift, invented by Dr. Henry Williams, with guards moving in an unbalanced line. His salary is now \$7,500. His record, in four years at Tulane: won 35 lost 9, tied 2.



\*\*On Dec. 5 Warner announced his acceptance of the head coachship at Temple University in Philadelphia, at a salary several thousand dollars in excess of what Stanford paid him. Temple University, a relatively young institution, started intercollegiate football in 1925; built a new concrete stadium four years later, which has a large indebtedness on it. With the acquisition of Warner, Temple is now in a position to draw some of the crowds heretofore drawn by the University of Pennsylvania, which a year ago renounced big-time football.



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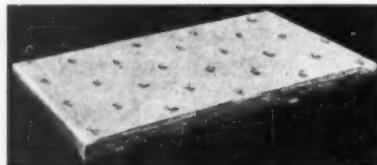
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## Hurdles

(Continued from page 9)

to see where the rest of the men are. You don't have to worry; they will usually be right with you.

There has been a lot of talk about "double hitch arm action." As far as I have ever found out, all that means is that as you go up, the left arm goes out. (If you have a fellow who takes off with his right foot, left and right are just the reverse.) That arm goes out ahead. As the rear leg comes forward, then that same arm must come back. As you walk, the left arm goes back as the left foot goes forward. So consequently, as I said before, the left arm has got to come back as the rear leg goes forward. Rising to the hurdle, here is the arm going out; on top of the hurdle, here is the arm coming back; on the ground, here is the arm going out again. That is what they call the hitch. It goes out, comes back, and goes out again. Don't let the fellow get it too far from the body. You may have seen a lot of times instead of coming back in close it comes back out here too wide or too high. Keep your elbows in and down as much as you can.

### START ON GRASS

There is a lot of talk about both hands forward. It is all right in practice because it tends to keep you down. If you get both hands out ahead, the weight tends to pull you down and forward. You find in running a race the men never have both hands out. The left will be a little ahead of the right.

When you are starting out with a fellow, it will be a good idea if you are out of doors to have him start out on grass, because if he falls, all he will do is get a few grass stains on his clothes, but if he falls in the cinders, he is liable to get cut up.

As to shoes, I always wear sprint shoes, I always have and you always should. However, a fellow starting out will tend to get a bone bruise in his heel. So put a little sponge rubber in the heel. Don't make him run with jumping shoes because

they are too heavy. Another thing is, he is apt to catch his heel spikes in a hurdle coming up. The whole idea back of wearing sprint shoes is weight, that is all. It just makes it a little easier and faster. You will find a good hurdler will not run on his heels anyway. He is up on his toes all the way down through.

Indoors you might try mats to land on, but don't get mats so soft that the men stub their toes.

As far as the hurdles are concerned, don't have them too heavy to practice with. Up at school we have a couple of cross sticks and a little piece across the top so if you hit it, it falls down and you don't hurt yourself. There is no reason why we should get all battered up in practice.

There is another thing a lot of fellows do which is a good idea when you are starting out, and that is to pad the back ankle, because you will find that a fellow will continuously keep getting hit right on the ankle bone. There have been cases where fellows have had some kind of an ossification there and have had to have it cut out. So put on some sort of a pad. He might wear something in the line of a boot affair, something like a pole vault shoe on the back foot, or he can put a piece of sponge rubber above the ankle and tape it on. Give him as much protection as possible. The idea is not to get him all lamed up. The idea is to let him enjoy the game.

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## Beverages

(Continued from page 22)

wild notions about drinking water. Some say water should not be drunk with meals; others firmly assert that it should not be drunk before or after meals; and still a third group do not believe in drinking water between meals.

If one were to follow all these opinions, he would quickly die of thirst. However, water is but one of the beverages to be included in the daily diet. Water drinking is necessary to keep the body in fluid equilibrium; by this is meant that water is essential to carry on the chemical changes in the tissues, and to act as a vehicle for carrying off body wastes.

Most authorities recommend eight glasses daily. The high school boy or girl, if athletically inclined, should take never less than six glassfuls daily. Of course, during the warmer months, an individual will tend to drink more water than during the cooler months, because of the greater amount that is lost through perspiration. For normal people there is no objection to drinking water at meal time as long as it is not used to wash down the food in the mouth. It may be drunk before and after meals, or between meals, or both ways.

Those who drink freely of milk or other fluids will not require as much water. It is possible to drink too much water, especially when an individual is suffering from certain types of kidney disease.

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### MILK, THE BUILDER

Milk is a valuable food as well as a beverage. People who are underweight or undernourished can make milk the main beverage in the diet, because it will help to increase weight. Milk supplies protein, some carbohydrate, a great deal of vitamins A and G, and a lesser amount of vitamin B. It is the best known food source of calcium and phosphorus. A quart of milk a day will furnish about one-seventh of the iron needed daily, and is therefore not an adequate source of iron. It also lacks vitamin C.

Malted drinks are essentially concentrated extracts of malted milk, sometimes with eggs and flavored with cocoa or chocolate. Other beverages of importance are the fruit juices. The one most commonly used is orange juice, which, in turn, is one of the best known sources of vitamin C, the antiscorbutic vitamin. Vitamin C is not stored in the body, nor are there a large number of foods that supply it. Hence, orange juice holds a place of importance in the diet because of its vitamin C content.

### TOMATOES, GRAPES & GRAPEFRUITS

More recently, tomato juice has become popular, and it too is a good source of vitamin C, and supplies some vitamin B as well. Grapefruit juice has about the same merits as orange juice, although to a smaller degree. Grape juice, a sweet drink with the flavor of the grape, has a considerable amount of sugar and an alkaline end reaction in the body. It has the same general qualities of other fruit juices but is not as valuable for vitamin C as orange juice or lemon juice.

Other types of beverages which are sometimes included in the diet of the high school boy or girl are tea and coffee. Both are stimulants, and unless cream or sugar are added to them, they have no food value. The use of excessive amounts of either of these beverages may produce headache and irritability. Perhaps the chief danger of such beverages lies not in their harmful action on the body, but rather in that they mislead the boy or girl who drinks them into thinking that they are full of energy, when the tissues are really fatigued.

Of course, alcoholic beverages in any form should not be taken by the boy or girl. To start the day right, he or she should begin with a glass of orange juice. Water should be drunk freely when thirsty, and a glassful of milk should be a part of each meal. Carbonated beverages are not harmful, but they apparently have no special benefits other than possibly a slight stimulation of the appetite. They should not replace the milk, because their food value is so limited.

It has been a well-defined impression in the past that tea, coffee and caffeine-containing drinks are bad for children. On the other hand, there has been a gen-

eral belief that cocoa is not harmful. On this subject, Dr. Lydia Roberts points out that few, if any, experiments have been performed directly on children to establish these impressions scientifically. Most of the evidence is derived from studies on animals.

It is, of course, known that the active principles of tea and coffee, namely, caffeine and theobromine, are drugs which, in sufficient amounts, produce definite effects on the body, the effect depending on the amount given, the way it is given, the condition of the person to whom it is given, and similar factors. Caffeine drinks stimulate energy production, speed up the breathing rate and increase the activity of the kidneys. It is known also that continued use of tea and coffee tends to produce tolerance, so that one can drink more without being affected.

The physiologic processes in the body of the child are more active than in the adult. The energy needs of the child are greater than those of the adult, and it is not advisable to replace the food that it should take by substances without considerable food value. Drinks that stimulate the metabolism increase the energy needs even more. Coffee in the diet tends to replace milk and other food substances of much greater importance.

Cocoa contains theobromine, a chemical substance closely related to caffeine. It is believed that it differs from caffeine only in having a greater effect on the kidneys and a less effect on the central nervous system. It would, therefore, be expected that cocoa would have the same effect on the child as tea and coffee, although it might have less tendency to produce sleeplessness. Cocoa made with water and sugar has just about the strength of a cup of coffee. Cocoa made with milk is equivalent to milk flavored with two tablespoons of coffee brew.

As a conclusion to these considerations, Doctor Roberts feels that cocoa made with milk is likely to be less harmful to the child than tea or coffee, but that cocoa made with water is but little different than tea or coffee.

Among the faddists there are also water fanatics that flood the body with fluids and in their places of employment wear a path from the desk to the drinking fountain. Overconcentration on water is just as bad a habit as overconcentration on anything else.

### Radio Deserved It

Denver, Colo.—Carl Hobart, 18, halfback for the West Denver High School team, one night had a dream of making a flying tackle in the game that was to take place the next day.

When he awoke he was lying face downward on the floor, with blood streaming from ugly gashes over his eye. He had tackled the radio in the corner of the room, badly damaging it as well as his skin.

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## A. S. BARNES & COMPANY

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67 WEST FORTY-FOURTH STREET  
NEW YORK, N. Y.

## Suitable for Girls

(Continued from page 14)

the hand out); women do things this way (drawing the hands toward the body). They are fundamentally different in the kind of things they get fun out of.

The program has to be set up that there shall not be any dangers. The whole question of accidents to girls has to be figured out. You must not have a program where the girl will have her face scratched or marred in any way. Many of the neuroses of young women come from the fact that they had had some slight, or what looked to their family as simple, accident which marred their face. Personal contact games have to be eliminated at once from the mass activity.

You have also to regulate activity in relation to the menstrual periods of the girl. The average girl matures at  $13\frac{3}{4}$  years. Consequently, the program has to be based upon and around that point, maturity, rather than around weight as we can so easily do with the boy. The spread in height of girls is very small as compared with the boy. The difference in weight is slight. Consequently, we are finding the year basis—twelve, fourteen and sixteen, in the country, seventeen in the city, and twenty-one makes a very convenient age basis for classification.

The activities that are set up must be vigorous but not violent. It is absurd to put boxing and wrestling in girls' individual athletics. We have found that it is necessary to have the games that take care of a lot of people; where we could have a team of five, we make it ten, to get general participation. We are getting something like a participation of about sixty-six percent.

The winners are sent at the expense of the County School Board to the City of Baltimore, where we entertain them at our expense in the state championships. So you see that we do not have any question of commercialism. The only time that money enters in is where we have a basketball game and have to limit the audience. At no other time is there a question of gate receipts. Each team that plays pays one-quarter and the state pays half the travel expenses.

### WEIGHT DISTRIBUTION

With this type of build (see drawing of girl on page 14) with the greater weight down here, the girl can't run well. The runner has to have his weight up here in the shoulders, otherwise he can't get his feet to propel him. So we have two-skill events—running, yes, but always some other skill in relation to it. I can't tell you why children under twelve like so much to run with an egg on a spoon. Last year we



### EXPERT OF EXPERTS

Mildred Babe Didrikson, Olympic heroine, who recently turned professional because of A.A.U. objection to an advertisement in which she endorsed the Dodge automobile.

had 104 girls out of 160 show up to carry an egg on a spoon forty feet.

Then we have a throwing event. Every throwing event leads to a game. A relay and team game are also on the program. Almost all of the girls go into either a relay or a team game. Last year there were 3708 girls entered on teams; 1568 on relays, and only 1392 in individual events. In other words, 5269 girls, or 79 percent entered events that had social training, two-skill events, and that made a team arrangement the important thing.

The result of it is, then, we have regulated the games of girlhood in Baltimore and the State of Maryland. They are orderly affairs. The girls have regard for rules and discipline. They are not interested in records primarily; we rarely have a question of any kind even on distance or hike records. You know the story about records—A man in a swimming pool was standing on the side and he said to the attendant, "What is the record for underwater swimming?" The attendant replied, "About a minute and one-half." The man said, "Well, there has been an old boy down here four minutes at the other end of the pool."

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